# K. O. LEE COMPANY ABERDEEN, SOUTH DAKOTA



K. O. Lee

# AUTOMOTIVE TOOLS AND EQUIPMENT

K. O. Lee



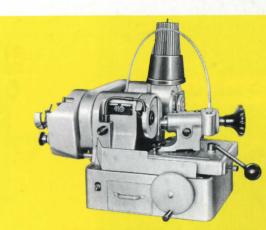
# Only Lee 'LIFETIME' Value Refacers Offer

- ★ Industrial grinding machine construction and accuracy.
- ★ V-way table construction found only on precision grinding machines.
- ★ Positive valve face angle locating perfect angle face assured.
- ★ Worm-drive valve chuck workhead provides continuous power transmission.
- ★ Specially designed removable (drawer type) coolant tank designed to assure residue free coolant back to point of grind.
- ★ Valve head chuck warranted accuracy less than .001" total indicator reading for runout.
- \* Right hand operation designed machines.

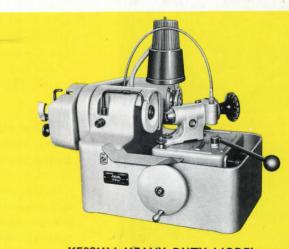
### and

The only valve refacers offering all automatic pre-load compensation for wear. No mechanical adjustments necessary, or expensive service or parts replacement. Machines retain their original fine accuracy throughout years and years of trouble-free service.

Name Your Own Warrantee!

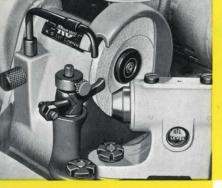


K403CM STANDARD MODEL
GOVERNMENT FEDERAL STOCK NUMBER
FSN 4910-540-4679
Complys with Fed. Spec. 00-G-686a



K500HM HEAVY DUTY MODEL

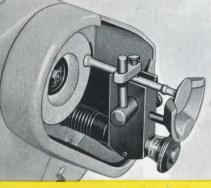
K. O. LEE COMPANY, ABERDEEN, SOUTH DAKOTA



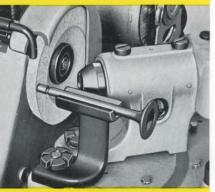
Rocker Arm Attachment



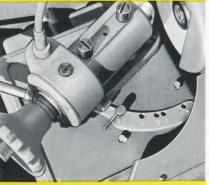
Wheel Dresser



**Butt Grinding Attachment** 

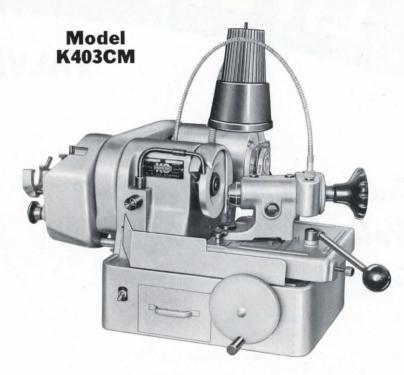


V-Rest for Butt Grinding



Positive Stop Angle Settings

# K. O. LEE "LIFETIME" STANDARD SERIES VALVE REFACERS



If valves with large diameter heads are to be ground, we recommend  $\frac{1}{2}$  H.P. Model K403H or K403HM.

The Lee Standard refacer does an exceptionally fine job of grinding valves, providing a super finish seldom equaled by more expensive machines, yet is priced far lower than competitive makes!

This refacer incorporates all of the basic principles of the Lee heavy duty machine and will do equally good grinding. Grinding wheel head is set at an angle to the table ways, thus enabling all valves to be ground with traverse feed. This is an original engineering feature of the Lee Company. Feed screw has V-type thread.

Flexible shaft drive on work head assures chatter-free grind on valve face.

One motor. Simplicity of design, with one motor driving grinding wheel, coolant pump and work head. Induction type motor with no brushes for years of trouble free, low cost service.

This machine is built to quality standards, including V-ways, hardened and ground spindles, collet chucks, precision bearings grease sealed for life, convenient coolant tank, and many other built in features found in no other refacer—regardless of price, provide a LIFETIME machine that will continue to accurately grind valves with super finish year after year. Name your own warrantee!

Specifications listed on back page.

# K. O. LEE "LIFETIME" DELUXE HEAVY DUTY SERIES VALVE REFACERS



The rugged, impressive appearance of this machine will command the respect of every mechanic. Built for continuous service with features offered only by Lee, it will condition valves, valve lifters, and rocker arms for cars, trucks, tractors and aircraft, marine and stock engines.

The Lee refacer is simple and convenient to operate. The table traverse arm is right-handed and adjusts to any convenient working position by merely turning knob and retightening. A knurled stop screw limits table travel and prevents accidental spindle nose damage.

One gallon tank with long coolant travel through adequate baffle plates to assure clean coolant.

One large capacity valve to feed coolant to either grinding wheel.

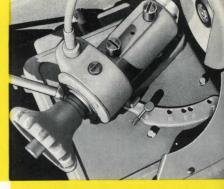
Flexible shaft drive on work head assures chatter-free grind on valve face.

Fork and feed nut are spring loaded to eliminate backlash. Feed screw has National Acme Thread.

One motor. Simplicity of design, with one motor driving grinding wheel, coolant pump and work head. Induction type motor with no brushes for years of trouble free, low cost service.

This Heavy Duty Refacer is built with machine tool precision, reflecting K. O. Lee's years of machine tool building experience. Compare this machine, feature for feature, for accuracy and for refacing results with any refacer at any price. It has automatic compensation for wear, retaining original unsurpassed precision accuracy for a Lifetime of trouble free service.

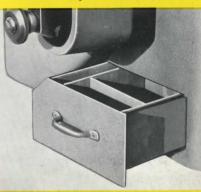
Specifications listed on back page



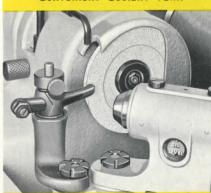
Positive Stop Angle Settings



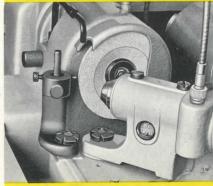
Sturdy Construction



Convenient Coolant Tank



Rocker Arm Attachment



Wheel Dresser



HAND OPERATED

Straight through design with adjustable plunger for valve stem stop. Plunger can be removed and any length valve ground. Not necessary to remove chuck for over length valves. K541 fits all K. O. Lee Refacers. Grips or releases valve instantly. Assures high speed accurate alignment for production valve refacing. Price \$59.50.



### **Automatic** Air Chuck

K500 SERIES ONLY

Air Switch is operated by the table at end of travel. Not necessary to remove hand from operating lever. Valves can be instantly changed. To install on K500's in the field, it is necessary to drill a 4%4" hole through Template furnished. the base. Price \$69.50.



### **Micrometer Butt Grinding Attachment**

Micrometer Butt Grinding Attachment includes depth gauge, a micrometer feed calibrated in .001", wheel guard, butt grinding wheel.

All model refacers are machined for simple adaption. State model number of machine when ordering as separate unit. K436C Attachment is for the K403C, D, and H Series, K536 Attachment is for K500 Series.



Heavy steel top makes sturdy mounting for valve refacer or tools. Twelve square feet of storage area protected by double swinging doors with 3-point locking device. Back and end stops, 2" high, are integral part of top which may be inverted and reversed to eliminate end stops. Center shelf adjustable on 11/2" centers. Built in lock. Size 36" wide, 24" deep, 34" high. Wt. 130 lbs.

MODEL K675P VALVE WAGON Same as K675WC except without castors. Wt. 125 lbs.

### K. O. LEE "LIFETIME" **VALVE REFACERS**

### Specifications

### Apply To Standard and Deluxe Heavy Duty Models

### VALVE STEM CAPACITY

RANGE AND LENGTH OF COLLET

12" to 16" x 3" long with K43D collet (standard equipment)

 $\frac{\%2}{1}$  to  $\frac{1}{2}$  ×  $\frac{2}{4}$  long with K43CL collet (extra equipment)

K43CL Collet used to service Falcon, Comet, Corvair and Oldsmobile F85 valves

%'' to  $\%'' \times 1\%''$  long with K43CS collet (extra equipment) 1/4" to 3/6" x 13/4" long with K43C collet (extra equipment)

 $\frac{1}{2}$ " to  $\frac{1}{6}$ "  $\times$  3" long with K43E collet (extra equipment)

### VALVE HEAD CAPACITY

Valve heads up to 4" (within valve stem range)

### **VALVE FACE ANGLES**

Zero to 90 degrees with minus one degree setting and positive stop

#### WEIGHT

Standard Model, Net Wt. 128 pounds, Shipping Wt. 152 pounds Deluxe Heavy Duty Model, Net Wt. 162 pounds, Shipping Wt. 205 pounds

STANDARD EQUIPMENT

Double-end collet, (%2" to %6" valve stem diameters) K43D

K532A Coolant Pump

P176D Diamond Screw in Holder K534 Diamond Holder

K436V V-Rest (only on machines without Butt Grinder)

K450 Rocker Arm Grinding Attachment, cone type OV5GH80S  $5'' \times 12'' \times 12''$  offset grinding wheel

Pint Can Lee Concentrate 2679

### AVAILABLE EXTRA EQUIPMENT

K436C Micrometer Butt Grinding Attachment (K403C Series) K536 Micrometer Butt Grinding Attachment (K500C Series) OV5GH80W 5" x ½" x ½" offset grinding wheel

Sharpening Fixture for Reseater Cutters K37

Double-end collet (32" to 132" valve stems) with K43PL spacer sleeve K43CL Double-end collet (¼" to ¾" valve stems) with K43P spacer sleeve K43C

Double-end collet (36" to 56" valve stems) with K43P spacer sleeve K43CS

Double-end collet (1/2" to 11/6" valve stems) K43E

Air Chuck \$59.50 K541

K675P Valve Wagon without castors

Valve Wagon with castors K675WC

Special workhead. Range  $\%^{\prime\prime}$  to  $\%^{\prime\prime}$  stems, with straight through double-end ball collet \$190.00 K443HL

2639

Worm Gear Lubricant. Quart can \$1.80 Honing oil for valve refacers. Gallon can \$2.40 2699

KVU1900 Plastic Cover

### **Models Available - Order By Stock Numbers**

MODELS AVAILABLE	MOTOR 1/3 HP, 115V 1 Ph., 60 Cy. AC	MOTOR 1/3 HP, 230V 1 Ph., 60 Cy. AC	MOTOR 1/2 H.P., 115/230V, 1 Ph., 60 Cy., AC. Please specify voltage. Motors are dual voltage and can be changed in the field. Instructions on Motor.
Standard Series Without Micrometer Butt Grinding Attachment	K403C	K403D	K403H
Standard Series With Micrometer Butt Grinding Attachment	K403CM	K403DM	K403HM
Deluxe Series Without Micrometer Butt Grinding Attachment			К500Н
Deluxe Series With Micrometer Butt Grinding Attachment			К500НМ

Litho in U.S.A.

VALVE SEAT GRINDER

Designed to give years of troublefree service. Pilots are hardened and ground. Driver incorporates a powerful ball bearing type universal motor. Wheel dresser has positive stops for accurate dressing of wheel. Pilot

wrench is of patented construction enabling quick insertion and release of pilot in guide. Wheel holders have hardened and ground bushings, ball bearing type have dust sealed bearings.

### NO BIG **INVESTMENT** IN PILOTS

Each pilot ranges from -.003 to +.007 of basic range stamped on pilot. One pilot does the work of several solid type pilots.



July 1, 1965

WEATHERLY INDEX 850

### MODEL P302BB UNIVERSAL BALL BEARING VALVE SEAT GRINDER

DESIGNED TO SERVICE MOST CARS, TRUCKS, AND TRACTORS

Consists of the following equipment:

One P61 One P83	Pilot Wrench 5/16" Self Expanding Pilot	One P235 One P235F	1-1/2" 1-1/2"	General Purpose Grinding Wheel Finishing Grinding Wheel
One P84	11/32" Self Expanding Pilot	One P235R	1-1/2"	Roughing Grinding Wheel
One P84L	11/32" Self Expanding Pilot (61/2" Length)	One P237	1-5/8"	General Purpose Grinding Wheel
One P85	3/8" Self Expanding Pilot	One P237F	1-5/8"	Finishing Grinding Wheel
One P97R	.394" Self Expanding Pilot (Oldsmobile Rocket)	One P237R	1-5/8"	Roughing Grinding Wheel
One P97	13/32" Self Expanding Pilot	One P239	1-3/4"	General Purpose Grinding Wheel
One P86	7/16" Self Expanding Pilot	One P239F	1-3/4"	Finishing Grinding Wheel
One P87	1/2" Self Expanding Pilot 9/16" Self Expanding Pilot	One P239R	1-3/4"	Roughing Grinding Wheel
One P88 One P372	Wheel Dresser with No. P176D Diamond Screw	One P241	1-7/8"	General Purpose Grinding Wheel
One P189	Tube Brush for cleaning Holder	One P241F	1-7/8"	Finishing Grinding Wheel
One P196X	Ball Bearing Grinding Wheel Holder (11/16"	One P241R	1-7/8"	Roughing Grinding Wheel
0 01001/	Threaded End)	One P243	2"	General Purpose Grinding Wheel
One P198X	Ball Bearing Grinding Wheel Holder (9/16" Threaded End)	One P247	2-1/4"	General Purpose Grinding Wheel
One P190B	Adapter Bushing (9/16" to 11/16")No Charge	One P251	2-1/2"	General Purpose Grinding Wheel
One P522	Utility Driver with Safety Button Switch and 10 ft. 3 conductor cable with plug (3rd wire for ground), 110 volt AC-DC	One P500B		ol Chest (10" high x 14-3/16" wide x 4" deep-Weight 21 lbs.)
One P223	Hexagonal Ball Terminal for 15/32" shaft			Net Shipping Weight 45 lbs.

With the substitution of P190 for the P196X and the P191 for the P198X, the P302BB set becomes the P302 set.

# "X. O. Lee" VALVE SEAT GRINDERS

### Model P300 Basic Valve Seat Grinder

Designed to service only those cars, trucks, and tractors the purchaser desires. In addition to the items listed below, the operator must select those stones, pilots, and other accessories necessary to service selected motors. Shipping Weight 39 lbs.

Pilot Wrench

One P372

One P189

Wheel Dresser with No. P176D Diamond Screw Tube Brush for cleaning Holder Grinding Wheel Holder (11/16" Threaded End) One P190 Utility Driver with Safety Button Swith, 110V Hexagonal Ball Terminal for 15/32" Shaft One P522 One P223

One P500B Box (10" high x 14-3/16" wide x 10-3/4" deep) With substitution of P196X for P190, set becomes P300BB ball brg. set.

### Model P301 Junior Valve Seat Grinder

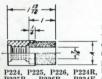
Designed to service most makes of cars, small trucks, and tractors. Additional grinding wheels, pilots and other accessories may be purchased when needed. Shipping Weight 41 lbs.

Pilot Wrench One P61

One P61 Pilot Wrench
One P83 5/16" Self Expanding Pilot
One P84 11/32" Self Expanding Pilot
One P85 3/8" Self Expanding Pilot
One P87 Self Expanding Pilot
One P97R Self Expanding Pilot
One P97R Wheel Dresser with No. P176D Diamond Screw
Tube Brush for cleaning Holder
One P190 Grinding Wheel Holder (11/16" Threaded End)
One P522 Utility Driver with Safety Button Switch, 110V
Hexagonal Ball Terminal for 15/32" Shaft
One each of the following Grinding Wheels:
P235 1-1/2", P237 1-5/8", P239 1-3/4" General Purpose
P235F 1-1/2", P237R 1-5/8", P239F 1-3/4" Roughing
One P500B Box (10" high x 14-3/16" wide x 10-3/4" deep)
With substitution of P196X for P190, set becomes P301BB ball br

With substitution of P196X for P190, set becomes P301BB ball brg. set.

### VALVE SEAT GRINDING WHEELS



K-O Wheels shown on the right with their short hubs will last twice as long as competitive wheels. They remain in service until com-pletely used. Wheel can remain in service until completely used. Wheel can P224R, P225R, P226R, P224R, wheel and 45° bottom side, P225F, P226F Wheels. 1 wheel serving 2 purposes. should be used.

	+5+
4 1	

GENERAL	FINISHING WHEELS	ROUGHING WHEELS	"A-DIAM.	GENERAL	FINISHING WHEELS	ROUGHING WHEELS	אינן A-DIAM.
*P224	*P224F	*P224R	7/8"	P238	P238F	P238R	111/6"
*P225	*P225F	*P225R	15/16"	P239	P239F	P239R	1 3/4"
*P226	*P226F	*P226R	1 "	P240	P240F	P240R	113/6"
*P227	*P227F	*P227R	1 1/6"	P241	P241F	P241R	1 1/8"
*P228	*P228F	*P228R	1 1/8"	P242	P242F	P242R	115/6"
*P229	*P229F	*P229R	1 3/6"	P243	P243F	P243R	2 "
P231	P231F	P231R	1 1/4"	P245	P245F	P245R	2 1/8"
P232	P232F	P232R	1 1/6"	P247	P247F	P247R	2 1/4"
P233	P233F	P233R	1 3/8"	P251	P251F	P251R	2 1/2"
P234	P234F	P234R	1 1/6"	P255	P255F	P255R	2 3/4"
P235	P235F	P235R	11/2"	P259	P259F	P259R	3 "
P236	P236F	P236R	1 %"	P261	P261F	P261R	3 1/4"
P237	P237F	P237R	1 5/8"	P263	P263F	P263R	3 1/2"

### GRINDING WHEELS FOR STELLITE

No.	A-Diam.	No.	A-Diam.	No.	A-Diam.	No.	A-L	Diam.
P235S	1 1/2"	P241S	1 1/8"	P247S	2 1/4"	P259S	3	"
	1 5/8"	P243S	2 "	P251S	2 1/2"			
P239S	1 3/4"	P245S	2 1/8"	P255S	2 3/4"			

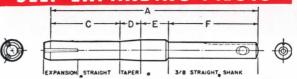
"Wheels have %"—16thd. All other K-O Wheels have %"—16thd. Sioux, Skil, Thor, U. S. Electric Tool also have %"—16thd. K-O Wheels with %" S.A.E. threads can be used on %" threaded end K. O. Lee holders and those made by other manufacturers such as Black and Decker, by using a No. P190B Bushing (11/6" to 16"). This bushing is furnished no charge to purchasers of K-O Wheels. Wheels P224, P225, P226, P227, P228, P229 are designed for small engine service.

#### **GENERAL PURPOSE**

### **Grinding Wheels For Kwik-Way**

		WHEE	ELS HAVE 1	3/16 -13	THREAD		
No.	A-Diam.	No.	A-Diam.	No.	A-Diam.	No.	A-Diam.
P236K	1 %"	P241K	1 1/8"	P247K	2 1/4"	P259K	3 "
P237K	1 5/8"	P243K	2 "	P251K	2 1/2"	P261K	3 1/4"
P239K	1 3/4"	P245K	2 1/8"	P255K	2 3/4"	P263K	3 1/2"

### SELF EXPANDING PILOTS



The Simplest, Most Accurate Pilot Made!

All advantages of a solid one-piece taper pilot plus the accuracy and rigidity assured by the expansion of the lower end are contained in a K-O Pilot. The true center of a worn guide is found and as a result the valve seat is reconditioned concentric with the actual operating line of movement of the valve stem.

The taper that contacts the upper part of the guide is slight. The pilot anchors deep down in the guide where proper bearing is obtained.

Part No.	Pilot Size	A	C	D	E	F
P95	1/4	511/32	1 3/32	7/8		3 3/8
P95S	1/4	421/32	25/32	7/8		3
P95L	1/4	611/32	1 3/32	7/8		4 3/8
P96	9/32	511/32	1 3/32	7/8		3
P96S	%32	421/32	25/32	7/8		3
P96L	%2	611/32	1 3/32	7/8		4 3/8
P83	5/16	5 1/4	1 3/4	3/4		2 3/4
P83R	%+.015	5 1/4	1 3/4	3/4		2 3/4
P83RL	%+.015	6 1/4	1 3/4	3/4	1/2	3 1/4
P83S	5/16	4 %	1 1/6	7/8		2 3/8
P83L	5/16	6 1/4	1 3/4	3/4	1/2	3 1/4
P84	11/32	5 1/4	1 3/4	3/4		2 3/4
P84S	11/32	4 1/2	1 1/4	7/8		2 3/8
P84M	11/32	4 1/2	111/16	7/8		115%
P84L	11/32	6 1/4	1 3/4	3/4		3 3/4
P84R	11/32+.015	5 1/4	1 3/4	3/4		2 3/4
P84RL	11/32+.015	6 1/4	1 3/4	3/4		3 3/4
P85F	.370	5 3/4	2	3/4		3
P85	3/8	5 3/4	2	3/4		3
P85R	<sup>3</sup> / <sub>8</sub> + .015	5 3/4	2	3/4		3
P85RL	3/8+.015	7 1/4	2 1/4	3/4	1	3 1/4
P85S	3/8	4 1/2	1 1/4	7/8	1	2 3/8
P85L	3/8	7 1/4	2 1/4	3/4	1	3 1/4
P97R	.397	5 5/8	1 1/8	5/8	-	3 1/8
P97	13/32	6	2.1/4	3/4		3
P97L	13/32	8 1/4	2 1/4	3/4	1 1/2	3 3/4
P86	732	6 1/4	2 1/2	3/4	1 /2	3
P86M	7/6	7 1/2	2 1/2	3/4	1	3 1/4
P86RM	% <sub>6</sub> +.015	7 1/2	2 1/2	3/4	1	3 1/4
P86L		8 1/2	2 1/2	1 1/6	1 1/6	3 1/4
P86S	7/16	5 1/4	1 3/8	7/8	1 /16	3
	7/16		2 1/2	3/4	1	3 1/4
P94M P87	15/32	7 1/2		3/4	1	3
	1/2	6 1/4	2 1/2	1 1/6	1	3 %
P87L P87M	1/2	8 1/8	2 1/2	1 1/6	1	3 %
P87M P93	1/2	7 1/8				3 1/2
P93 P88	17/32	6 3/4	2 1/2	3/4		3
P88M	%6	6 1/4	2 ½	3/4	-	3 %
P88L	%16	7 1/8	2 ½	1 %	13/16	3 1/4
P88L P92	%16		2 1/2	1 7/6		3
	19/32	5 1/4	1	1/2	3/4	3
P89	5/8	6 1/4	2 1/2	3/4		3
P98	11/16	6 1/4	2 1/2	3/4	-	3 1/2
P98L	11/16	8 3/8	2 1/2	1 3/8	1	
P99	3/4	6 3/4	2 1/2	1		3 1/4
P91L	1 1/32	4 3/4	3/4	1/2		3 1/6
P8236	6MM	4 %6	1 1/6	7/8		2 3/8
P8236S	6MM	4 1/32	25/32	7/8		2 3/8
P8255	6½MM	4 %6	1 1/6	7/8		2 3/8
P8275	7MM	4 %6	1 1/6	7/8		2 3/8
P8295	7½MM	5 1/32	125/32	3/4		2 3/4
P8315	8MM	5 1/32	125/32	3/4		2 3/4
P8334	81/2 MM	5 1/32	125/32	3/4		2 3/4
P8354	9MM	5 1/32	125/32	3/4		2 3/4
P8374	9½MM	5 3/4	125/32	3/4		3
P8393	10MM	5 3/4	125/32	3/4		3
P8472	12MM	6 1/4	2 1/2	3/4		3
P8820	.820	4 3/4	3/4	1/2		3 1/2

P90 .850" Special Pilot for Ford V-8 60.

P91 1-1/32"x1" Special Pilot for Ford V-8 for use when lifters are removed from engine.

Each pilot ranges from -.003'' to +.007'' of basic range stamped on pilot. One pilot does the work of several solid type pilots.

P61 Pilot Wrench must be used with above Wheel Holders.

### VALVE SEAT GRINDER ACCESSORIES

### K. O. Lee" UTILITY DRIVER

P522 1/3 H.P. UTILITY DRIVER with safety button switch and 10 ft. 3-conductor cable, 115V and 230V motors available specify voltage.

322 32V ¼ H.P. UTILITY DRIVER P322 available.



GROUNDING. These motors are equipped with a three conductor cord with the ground wire (green covered conductor) connected internally to the motor housing. To give maximum protection connect the plug-in of this green ground wire to a permanent ground or a suitable grounding device.

#### "K-O" PILOT WRENCHES

Pilots are instantly placed in or removed from valve guides with this wrench. Easy and simple to operate, the K-O Pilot Wrench is a great time saver to the mechanic.

Standard "K-O" Pilot Wrench. Special "K-O" Pilot Wrench for Crosley Engines.



### WHEEL DRESSER

### P372 Wheel Dresser



Dressing Wheel to Desired Diam.

### FFATURES.

- The K-O Wheel Dresser is mounted on non-skid rubber pads which elimi-nate vibration and hold it firmly to the work bench while wheel is being dressed. It is quick and simple to operate as the plunger and diamond are held by constant friction and require no locks or adjustment for the life of the tool.
- The plunger is protected from abrasive dust by dust seals at both ends.
- The swivel is graduated with positive stops for 0, 15, 30, 45, 60, 75 and 90 degrees.
- Vertical screw adjustment for raising or lowering position of grinding stone, making possible diamond dress-ing of smallest diameter wheels and any angle requirements.

Net Weight .....101/4 lbs.

### GRINDING WHEEL HOLDERS



1/2" HEX DRIVE
P190 4" long, ½" hex socket, 11/16" threaded end
PS190 234" long, ½" hex socket, 11/16" threaded end
(For Kaiser-Frazer, other hard to reach seats)
P191 4" long, ½" hex socket, 9/16" threaded end
P196X Ball bearing, 4" long, ½" hex socket, 11/16"
threaded end
P198X Ball bearing, 4" long, ½" hex socket, 9/16"

P198X Ball bearing, 4" long, ½" hex socket, 9/16" threaded end 4" long, ½" dia., ½" hex socket, 9/16" threaded for Crosley).

P197X Ball bearing, 4" long, ½" hex socket, 11/16" threaded end. P199X Ball bearing, 4" long, ½" hex socket, 9/16" threaded end. P390 234" long, ½" hex socket, 11/16" threaded end. P390 234" long, ½" hex socket, 11/16" threaded end. P390 4" long, ½" hex socket, 9/16" threaded end. P399 4" long, ½" hex socket, 9/16" threaded end. P399 4" long, ½" diameter, ½" hex socket, 9/16" threaded end (for Crosley).

To obtain exchange price on new whool helder.

To obtain exchange price on new wheel holders, a used K. O. Lee

#### ANGLE DRIVE ATTACHMENT



P360 1/2" Hex Angle Drive Attachment P362 5/8" Hex Angle Drive Attachment

The K-O Angle Drive Attachments can be used when grinding airplane cylinders and hard-to-get-at seats in automobile motors. Fits all drivers. Over-all length 11"; net weight 14 oz.

#### P460 GEARED ANGLE DRIVE — 60°

A rugged angle drive designed especially for close quarters such as the back valve seats on Kaiser, Frazer, Studebaker Trucks, etc. Available in two gear ratios, 1 to 1

for grinding wheels up to 21/2 diam., 11/2 to 1 for larger grinding wheels. Fits all drivers.

P460	Geared	Angle	Drive	(1 to 1, 1/2" hex drive)
P461	Geared	Angle	Drive	(1½ to 1, ½" hex drive)
P462	Geared	Angle	Drive	(1 to 1, 5/8" hex drive)
P463	Geared	Angle	Drive	(11/2 to 1, 5/8" hex drive)

#### INDICATOR SEAT

### P350 Indicator to Fit 3/8" Pilot

A K-O Valve Seat Indicator will prove a decided advantage to any mechanic. The few seconds used to check a valve seat grinding job may save hours of labor later on. It is sound insurance against "come-backs." The K-O Indicator, having but one adjustment, is simple and easy to operate.

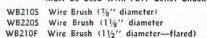


### HEX BALL TERMINALS AND ADAPTER SLEEVES

1/2" Hex Ball Terminal for 15/32" Motor Shaft 5/8" Hex Ball Terminal for 15/32" Motor Shaft Split Adapter Sleeve (15/32" to 5/16") Split Adapter Sleeve (15/32" to 3/8")



### CARBON REMOVING WIRE BRUSHES Must Be Used With P217 Collet Chuck WB220S



### GUIDE REAMERS

### Solid Type



"K. O. Lee" Valve Guide Reamers will ream faster and cleaner and hold size longer making them the most economical in the end.

Number	Size	Number	Size	Number	Size
H1236	6MM	H1334	81/2MM	H1393	10MM
H1250	1/4"	H1343	11/32"	H1397	.397"
H1255	61/2 MM	H1353	11/32"+.010	H1406	13/32"
H1275	7MM	H1363	11/32"+.020	H1437	7/16"
H1281	9/32"	H1354	9MM	H1472	12MM
H1295	71/2 MM	H1373	$\frac{3}{8}^{"}$ — .002	H1500	1/5"
H1312	5/16"	H1374	91/2 MM	H1625	5/8"
H1315	8MM	H1375	3/8"		70

### VALVE SEAT GRINDER ACCESSORIES

### HAND GRINDING ATTACHMENTS



One P278

One P278

One P275

One P275C

One P275C

One P275C

One P275E

One P275E

One P275E

One P275E

One P38H60 3" x ½" x 5½" hole, Plain Wheel

One PR3BH60 3" x ½" x 5½" hole, Plain Wheel

One PR3FH60 3" x ½" x 5½" hole, Plain Wheel

One PR3FH60 3" x ½" x 5½" hole, Plain Wheel

One PR3FH60 3" x ½" x 5½" hole, Plain Wheel

One PR3FH60 3" x ½" x 5½" hole, Plain Wheel

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One PR3FH00 3" x ½" x 5½" x 5½" hole, Plain Wheel

One PR3FH60 3" x 5½" x 5½" x 5½" x 5½" hole, Plain Wheel

One PR3FH60 3" x 5½" x 5½" x 5½" x 5½" hole, Plain Wheel

One PR3FH

EXTRA WHEELS

11/4" x 1" x 1/4" Shank Mounted Wheel

11/2" x 1" x 1/4" Shank Mounted Wheel



### P217 Collet Chuck

1/4" Collet Chuck for 15/32" Motor Shaft for holding mounted wheels, abrasive disk holders.

ADAPTER SLEEVES

For use with P217 Collet Chuck, P278 Flanged Wheel Holder, P220 and P223 Hex Ball Terminal and P281 Drum Arbor to old style

rzzu and rzz Hex Ball Terminal and PZ81 Drum Arbor to old driver having small shaft diameter.

P216S Split Adapter Sleeve (15/32" to 5/16")

P217S Split Adapter Sleeve (15/32" to 3%")

P218S Split Adapter Sleeve (14" to 1/8") for use on P217 Collet Chuck only

### ABRASIVE DISC ATTACHMENT

P277 Abrasive Disc Attachment



One 416
One 424
Abrasive Disc, 4" diameter, No. 16 grit, ½" h
One 436
One 436
Abrasive Disc, 4" diameter, No. 24 grit, ½" h
One 460
Abrasive Disc, 4" diameter, No. 36 grit, ½" h
One 480
One 4100
Abrasive Disc, 4" diameter, No. 60 grit, ½" h
One 516
One 516
One 524
Abrasive Disc, 4" diameter, No. 100 grit, ½" h
One 536
Abrasive Disc, 5" diameter, No. 12 grit, ½" h
One 536
One 560
Abrasive Disc, 5" diameter, No. 24 grit, ½" h
One 580
Abrasive Disc, 5" diameter, No. 36 grit, ½" h
One 5100
One 5100
One 5270
Abrasive Disc, 5" diameter, No. 80 grit, ½" h
One 5100
One 72776
Abrasive Disc, 5" diameter, No. 100 grit, ½" h
One 72777
Abrasive Disc, 5" diameter, No. 100 grit, ½" h
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One 72776
Abrasive Disc, 5" diameter, No. 100 grit, ½" h
One 72776
Abrasive Disc, 4" diameter, No. 100 grit, ½" h
One 72776
Abrasive Disc, 4" diameter, No. 100 grit, ½" h

NOTE: Both the 31/4" and 41/4" Fibre Backings should be used to support 5" Discs, whereas only the 31/4" Backing is necessary for 4" Discs. When the outer edge of a Disc is worn, it can be trimmed by holding it edgeways against any sharp metal while the Driver is running.

#### POST TOOL HOLDER

With the use of a tool post holder listed below, the Driver can be kly mounted on a lathe for internal and cylindrical grinding.

Tool Post Holder,  $\frac{3}{2}('' \times 3\frac{3}{4})''$  Shank

Tool Post Holder,  $\frac{3}{2}('' \times 1)^{4}('' \times 1)^{4}$  Shank

Motor Switch Hold Down Ring

P273

### "K. O. Lee" UTILITY HAND GRINDER SET



### HAND GRINDING ATTACHMENT (P280)

Used with mounted wheels, it's ideal for die and pattern makers. With straight and cup wheels up to 4" it's a versatile tool for any shop.

#### TOOL POST HOLDER (P270)

Three shank sizes available. Doubles as auxiliary handle for sanding and off-hand grinding.

Uses 4" and 5" abrasive discs. High speed cuts faster, prevents loading. Complete with 14 assorted abrasive discs.

ABRASIVE DISC ATTACHMENT (P277)

features: ONE TOOL FOR MANY JOBS. The powerful "K-O" Utility Motor is compact, light weight and easy to handle. Quickly and easily adapted for use with 4" and 5" abrasive discs, grinding wheels from small mounted ones to 3" diameter straight and cup wheels. Tool post holder converts it to a tool post grinder or doubles as an extra handle for off-hand work. Packed in sturdy, attractive steel box with ample room for extra sanding discs, grinding wheels and accessories.

P200B Steel Box

P400 UTILITY HAND GRINDER SET

includes

P522 Utility Driver P270 Tool Post Holder

P277 Abrasive Disc Attachment

Hand Grinding Attachment

### 850

### RESEATER SET

Universal

### features:

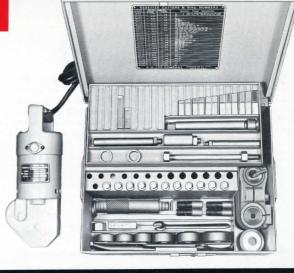
- Simple to Operate
- Accurate Precision Built
- Tool Steel Cutters
- Rugged Basic Design

### RESEATER SETS AVAILABLE

- Basic Set (Manual Operated) R500 R501 Basic Set with R55B Power Drive Junior Set (Manual Operated) Junior Set with R55B Power R502 R503
- R504 Universal Set (Manual Oper-
- Universal Set with Power Drive R505 R55B







#### FOLLOWING RESEATER CONSISTS OF UNIVERSAL MODEL R504

Designed to service 98 per cent of all makes of cars, trucks and tractors. Model R504 Universal Reseater Set consists of

House Root inversal Research Research Research Research Shank, 634"x34"x1" head R19 Driver Handle R20H 11/2" Driver Head R22H 134" Driver Head R24H 2 "Driver Head R24 R33

2½" Driver Head
Spacer Washer for Shank, ¼"x¾"
Spacer Washer for Shank, ½"x¾"
Two Hardened Washers for Rod
7/16" U.S.S. Stud Extension
½" U.S.S. Hardened Stud Extension
½" S.A.E. Hardened Stud Extension
½" S.A.E. Hardened Stud Extension
½" S.A.E. Hardened Stud Extension R38

R45 R46 1/2" U.S.S. Hardened St 1/2" S.A.E. Hardened St "S" Wrench for Pilots Set Screw Wrench Spanner Wrench Screw Feed Attachment (Consists of R66 Feed Nut with bear-ing and R67 Feed Screw)

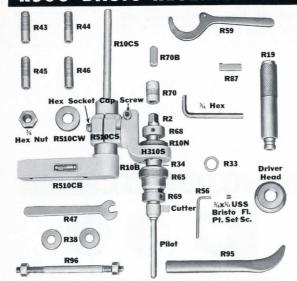
Stop Collar with Set Screw Stop Collar with Raised Bar Coupling R69 R70 R70B

Drive Bar Clincher, 1½" long Clincher, 2¾" long **R88** R95 R96 Ring Extractor R95 Ring Extractor
R96 Threaded Clamp Rod with Nuts
R101 to R112 Twelve Cutters
R210 5/16" Standard Pilot
R210P1 5/16" + .001 Pilot
R210P2 5/16" + .002 Pilot

Shipping Weight 34 lbs.

11/32" Standard Pilot 11/32" + .001 Pilot 11/32" + .002 Pilot R211P1 R211P2 R211P2 11/32" +.002 Pilot
R212 3%" Standard Pilot
R212P1 3%" +.001 Pilot
R212P2 3%" +.002 Pilot
R213M9 13/32" -.009 Pilot
R213 13/32" Standard Pilot
R214 7/16" Standard Pilot
R216 1/2" Standard Pilot
R219 19/32" Standard Pilot
R219 19/32" Standard Pilot
R220 5%" Standard Pilot
R233 11/32" Pilot for Ford V8-85
R504BA Box only R504BA Box only R504T Tray R510 Universal Guide KO-17 Data Plate 5/8" Hex. Nut

#### R500 BASIC SET



This set is designed to service any one model of car, truck, or tractor from the smallest to the largest, regardless of cylinder block style. NOTE: The R500 Basic Set DOES NOT include Pilots, Driver Heads or Cutters for Rings. It is necessary that the purchaser order these items separately, specifying desired size of each for use on selected motors. Model R500 Basic Reseater Set consists of the following items:

Model	R500 Basic Reseater Set consists	or the	following items.
R2	Reseater Shank, 63/4"x 3/4"x1" head	R65	Screw Feed Attachment (Consists of R66 Feed Nut
R19	Driver Handle		with bearing and R67 Feed
R33	Spacer Washer	D.C.O.	Screw)
R34	Spacer Washer	R68 R69	Stop Collar with Set Sc. Stop Collar with Raised Bar
R38	Two Hardened Washers	R70	Coupling
R43	7/16" U.S.S. Stud Exten.		Drive Bar
R44	7/16" S.A.E. Stud Exten.	R87	Clincher, 11/2" long
R45	1/2" U.S.S. Hardened Stud Extension	R95 R96	
R46		R5041	BA Box only
	Éxtension	R504	
R47	"S" Wrench for Pilot	R510	Universal Guide
R56	Set Screw Wrench	KO-1	7 Data Plate
R59	Spanner Wrench		5/8" Hex. Nut

#### R502 JUNIOR RESEATER

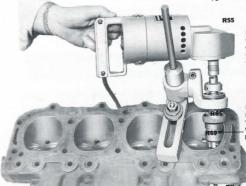
Designed to service 90 per cent of all cars, trucks and tractors; includes equipment for clinching and extracting rings. Additional cutters, pilots and other accessories may be subsequently purchased when needed.

Model R502 Junior Reseater Set consists of the following items: R65 Screw Feed Attachment

Reseater Shank, 63¼′′x 3¼′′x1′′ head Driver Handle (Consists of R66 Feed Nut with bearing and R67 Feed R19 R19 Driver Handle
R20H 1½" Driver Head
R24H 2 " Driver Head
Spacer Washer for Shank,
½"x¾4"
R34 Spacer Washer for Shank, Screw) Stop Collar with Set Sc. Stop Collar (Raised Block) Coupling R70 Coupling
R70B Drive Bar
R70B Dri R70 ½''x¾'' Two Hardened Washers R38 for Rod 7/16" U.S.S. Stud R43 Extension 7/16" S.A.E. Stud R44 Extension 1/3" U.S.S. Hardened Stud R45

Y2" U.S.S. From Extension
Y2" S.A.E. Hardened Stud
Extension
"S" Wrench for Pilots
Set Screw Wrench R46

R504BA Box only R504T Tray R510 Universal Guide KO-17 Data Plate 5/8" Hex. Nut



K. O. Lee Reseater shown in operation on a late extreme angle valve-in-head

R69 Stop Collar with raised bar is used when R65 feed nut will not enter valve

DAKOTA K. O. LEE COMPANY, ABERDEEN, 50.

### X.O. Lee RESEATER ACCESSORIES

### RESEATER CUTTERS





K-O Reseater Cutters are made from high speed tool steel. Recesses are accurately cut with K-O cutters. There are no adjustments to be made; simply insert cutter in Reseater Shank, press firmly against shoulder of the cutter and lock with set screw. Each K-O cutter is made to accommodate two or more ring sizes.

Cutter	For Ring D	iameters	Cutter	For Ring D	iameters
No.	"O" Side	"K" Side	No.	"O" Side	
R 98	15/16"	1 "	R110	2- 7/16"	21/2"
R 99	1- 1/16"	11/8"	R111	2- 9/16"	25/8"
R100	1- 3/16"	11/4"	R112	2-11/16"	23/4"
R101	1- 5/16"	13/8"	R113	2-13/16"	
R102	1- 7/16"	1 1/4'' 1 3/8'' 1 1/2''	R114	2-15/16"	
R103	1- 9/16"	15/8"	R115	3- 1/16"	31/8"
R104	1-11/16"	13/4"	R116		31/4"
R105	1-13/16"	17/8"	R117	3- 5/16"	33/2"
R106	1-15/16"	2'"	R118	3- 7/16"	31/2"
R107	2- 1/16"	21/8"	R119	3- 9/16"	35/9"
R108	2- 3/16"	21/4"	R120	3-11/16"	31/8" 31/4" 33/8" 31/2" 35/8" 33/4"
R109	2- 5/16"	21/4"		100	- /-

NOTICE: Shank RO and Feed Screw R67S must be used with R98 and R99.

### RESEATER PILOTS

The second secon	THE RESERVE THE PROPERTY OF THE PERSON OF TH
No. Size	No. Size
R208 1/4" Standard Pilot	R212P15 3/8" +.015 Pilot
R208S 1/4" Short Pilot	R212P30 3/8" +.030 Pilot
R208M14 6mm Pilot	R213M2 13/32"002 Pilot
R208P6 6.5mm Pilot	R213M9 13/32" 009 Pilot
R209 9/32" Standard Pilot	R213M12 10mm Pilot
R209S 9/32" Short Pilot	R213 13/32" Standard Pilot
R209M5 7mm Pilot	R214M1 7/16" —.001 Pilot
R209P15 7.5mm Pilot	R214M2 7/16"002 Pilot
R210M1 5/16" —.001 Pilot	R214 7/16" Standard Pilot
R210M2 5/16" —.002 Pilot	R214P1 7/16" +.001 Pilot
R210 5/16" Standard Pilot	R214P2 7/16" + .002 Pilot
R210P1 5/16" +.001 Pilot	R215 15/32" Standard Pilot
R210P2 5/16" +.002 Pilot	R215P3 12mm Pilot
R210P3 8mm Pilot	R216M1 1/2" —.001 Pilot
R210P4 5/16" +.004 Pilot	R216M2 1/2" —.002 Pilot
R210P15 5/16" +.015 Pilot	R216 1/2" Standard Pilot
R210P30 5/16" +.030 Pilot	R216P1 $\frac{1}{2}$ " + .001 Pilot
R211M1 11/32" —.001 Pilot	R216P2 1/2" +.002 Pilot R217 17/32" Standard Pilot
R211M2 11/32" —.002 Pilot	R217 17/32" Standard Pilot
R211M3 11/32" —.003 Pilot	R217M1 17/32" —.001 Pilot
R211M9 8.5mm Pilot	R217P1 17/32" +.001 Pilot
R211 11/32" Standard Pilot	R218 9/16" Standard Pilot
R211P1 11/32" +.001 Pilot	R218P1 9/16" +.001 Pilot
R211P2 11/32" +.002 Pilot	R218P2 9/16" +.002 Pilot
R211P3 11/32" +.003 Pilot	R219 19/32" Standard Pilot
R211P10 9mm Pilot	R220 5/8" Standard Pilot
R211P15 11/32" +.015 Pilot	R220P1 5/8" +.001 Pilot
R211P30 11/32" +.030 Pilot	R222 11/16" Standard Pilot
R212M1 9.5mm Pilot	R222P1 11/16" +.001 Pilot
R212M2 3/8" —.002 Pilot	R222P2 11/16" +.002 Pilot
R212 3/8" Standard Pilot	R224 3/4" Standard Pilot
R212P1 3/8" +.001 Pilot	R226 13/16" Standard Pilot
R212P2 3/8" +.002 Pilot	R227P6 .850" Ford Pilot
R212P5 3/8" +.005 Pilot	R233 1-1/32" Ford Pilot

### RING CLINCHER EQUIPMENT

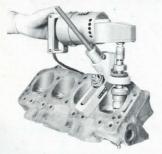


R87 Clincher for rings up to K-O No. 18,  $11\!\!\!/2''$  long R88 Clincher for rings K-O No. 19 and larger,  $23\!\!\!/8''$  long R59 Spanner Wrench for Screw Feed

SPECIAL ACCESSORIES FOR USE ON MODEL RE101-A
MINNEAPOLIS MOLINE MOTOR

R10CM Guide Casting only R12M Raising Block

#### INSERT POWER DRIVE



R55B Valve Seat Insert Power Drive is rugged, heavy duty, precision built. Provides adequate power for all jobs. Gets the work done in a hurry. Can be used with all K. O. Lee reseater sets in the field.

Available with 115 or 230 volt Universal motor.

### DRIVER HANDLE AND DRIVER HEADS





FOR VALVE SEAT RINGS d Heads are hardened. The handle is tapped so FOR VALVE SEAT RINGS

K-O Driver Handle and Heads are hardened. The handle is tapped so that a pilot can be screwed in to serve as a guide when driving rings.

R15H Driver Head, 15/16" x 3¼" R24H Driver Head, 2 "x 3¼" R34" R25H Driver Head, 1½" x 3¼" R25H Driver Head, 1½" x 3½" R25

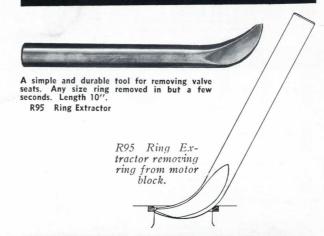
### RESEATER SHANKS

K-O Reseater Shanks are hardened and precision ground. The head of the shank is ground flat on opposite sides, against which the cutter bears. One flat surface is stamped "O"; the other "K." The "O" side is ground 1/32" more than the "K" side, thereby permitting a cutter inserted in the "K" side to cut a recess 1/16" larger than when inserted in the "O" side. Therefore a cutter, used in a K-O shank will cut two different size recesses, each serving several different rings.

R0 Reseater Shank, 634" x 34" x 34" head
R1 Reseater Shank, 41/2" x 34" x 1" head
R2 Reseater Shank, 634" x 34" x 1" head
R3 Reseater Shank, 87 x 34" x 1" head
R4 Reseater Shank, 87 x 34" x 1" head

Above Reseater Shanks are available for cutting .005, .010, .015, .020, .030 and .045 oversize recess, utilizing standard cutters. To order specify shank and oversize, as R2+.010.

### VALVE SEAT RING EXTRACTORS









R65

- Screw Feed Attachment (Consists of R66 Feed Nut with bearing and R67 Feed Screw) Feed Screw
- R67S Feed Screw (For use with RO Shank and R99 Cutter) fits in R65
- Stop Collar. R69 Stop Collar with raised blocks.

### SHARPENING FIXTURE



K. O. Lee reseater cutters are easily resharpened with the sharpening fixture (K37) which holds the cutter in position in the workhead. Disconnect cable from workhead during cutter sharpening oper-

# VALVE GUIDE REAMING SETS



Aligning guide assembly with original valve guide bore using a Lee self expanding pilot and 3/8" aligning bushing.



Inserting bushing and reamer in guide assembly after aligning guide assembly with valve guide bore.



The reamer is guided true with reaming bushing. T-wrench is used for hand operation.



The R55B power drive is adaptable as a power unit for reaming operation.

The K. O. Lee valve guide reaming tools are designed to service late model engines which have valve guides cast as part of the cylinder head. These tools can be used to install oversize stem valves or replaceable valve guides.

### **Installing Oversize Stem Valves**

This is accomplished by reaming out the valve guide for oversize stem valves. Most of the engines and valve manufacturers now offer at least three sizes of oversize valves.

The K. O. Lee reamer guide provides a true alignment with original guide bore using Lee self-expanding pilots. The reamer is held rigid with reaming bushing during reaming operation. Simple to operate and extremely accurate. Sets available described on page 2.

### Installing Replaceable Valve Guides

When old valves are still serviceable, it is more economical to install replaceable valve guides. Roughing and finishing reamers used with the K. O. Lee reamer guide, accurately cut the recess for a replaceable guide. A complete listing of the replaceable valve guides, roughing and finishing reamers, and expanding pilots available are listed on page 3. Guide service data on back page.

### **OPERATING INSTRUCTIONS**

FOR INSTALLING OVERSIZE STEM VALVE

Clean out valve guide hole with an H1000 series Solid Valve Guide Reamer. Position self-expanding pilot in valve guide with P61 Pilot Wrench. Loosen all swivels of reamer guide assembly and install pilot aligning bushing in universal ball. Position unit on expanding pilot. Rotate unit until clamp rod can be aligned to stud hole. Tighten clamp rod with fingers until base is held firmly to block. Tighten swivels and ball socket. Loosen clamp rod, reposition and lock to block as shown in photo number 1. (NOTE: To attain extreme accuracy, it may be necessary to loosen and tighten swivels of reamer guide assembly several times.)

Remove expanding pilot and aligning bushing. Position piloted reamer in valve guide. Install reaming bushing on top shank of reamer as shown in photo number 2.

In photo number 3, Reaming Bushing is shown in position in universal ball, providing true alignment. Unit is now ready for reaming. T-wrench is used for hand operation.

Power Drive R55B, adaptable as a power unit, is shown in photo number 4. Available with 115 or 230 volt universal motor.

### FOR INSTALLING REPLACEABLE VALVE GUIDES

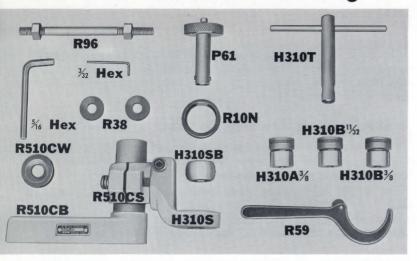
The same procedure is used when installing replaceable valve guides. Let us assume that the replaceable guide you wish to install has an O.D. of ½". In photo 2, the H8494 roughing reamer would be used with the H310B% bushing. The roughing reamer operation would be followed with the H3500 Carbon Steel or H7500 High Speed Steel finishing reamer using the same bushing, as all roughing and finishing reamers have a %" shaft. As power is required for these reaming operations a ½" drill is recommended. All thin wall valve guides should be installed with some type of press. O.D. OF VALVE GUIDE AND HOLE MUST BE LUBRICATED BEFORE ATTEMPTING TO INSTALL GUIDE. If necessary to ream I.D. of guide after installation, use H1000 series solid reamers shown on page 3.

Litho in U.S.A.

Form VGR-2 — July 1, 1963

### K. O. LEE VALVE GUIDE REAMING SETS

### **H300 Basic Valve Guide Reaming Set**



This basic set used with any of the H2000 series Valve Guide Reamers and sets listed on page 3, provides upper guide for reamer. Enables mechanic to get a true hole, not bell shaped. Self Expanding Pilots required are listed in special valve guide reaming sets and on page 3.

#### SET CONSISTS OF

H310S Swivel Head	26.00
H310SB Swivel Ball	
R510CB Base	
R510CS Univ. Swivel	
R510CW Special Washer	
R10N Guide Nut	
5/16 Hex Wrench	
H310A 3/8" Aligning Bushing	3.90
H310B11/32" Reaming Bushing	3.90
H310B3/8" Reaming Bushing	3.90
Each Reaming Bushing will take care of all oversize reamers in its size.	
H310T T-Wrench	2.60
P61 Pilot Wrench	4.90
R38 Two Washers	.20
R59 Spanner Wrench	
R96 Clamp Rod	.60
3/32 Hex Wrench	.20
H505B Metal Box	20.00
-	
COMPLETE SET 6	9.20

WITH THE ADDITION OF A SMALL NUMBER OF PARTS THIS SET CAN BE USED AS A BASIC RESEATER SET.
REFER TO K. O. LEE RESEATER CATALOG SHEET.

The H300 Basic Valve Guide Reaming Set can be used to install oversize stem valves or to install replaceable valve guides. To install oversize stem valves, select the proper oversize H2000 SERIES reamer, and self expanding pilot from the listing of accessories on page 3.

To install replaceable valve guides, select the correct self expanding pilot for alignment, and roughing

and finishing reamers to cut the O.D. size of the replaceable guide.

The reaming sets listed below, though set up for installing oversize valves, can be used to install replaceable guides with addition of roughing and finishing reamers, H310G adapter and H310B% reaming bushing.

### **R55B Power Drive**

AVAILABLE FOR H300, H302, H306 AND H307 SETS \$95.00

H310D	Adapter	1/4" Square	3.60
H310E	Adapter	9/32" Square	3.60
H310F	Adapter	21/64" Square	3.60

### H302 Junior Valve Guide Reaming Set

This set will service Ford, Chevrolet, Mercury, Lincoln and Pontiac engines for .003" oversize valves. Plymouth, Dodge, Chrysler, DeSoto for .065" oversize valves.

#### SET CONSISTS OF

H310 Reamer Guide Assembly	26.00
H310A 3/8" Aligning Bushing	3.90
H310B11/32 Reaming Bushing	3.90
H310B3/8" Reaming Bushing	3.90

Each Reaming Bushing will take care of all oversize reamers in its size.

H310T T-Wrench	2.60
H2347 Reamer 11/32"+.003"	4.60
H2376 Reamer 3/8"+.001" (.376")	4.60
H2379 Reamer 3/8"+.005"	4.60
P61 Pilot Wrench	4.90
P84L 11/32" Self Expanding Pilot	6.00
P85L 3/8" Self Expanding Pilot	6.00
R38 Two Washers	.20
R59 Spanner Wrench	3.00
R96 Clamp Rod	.60
3/32" Hex Wrench	.20
H505B Metal Box	20.00
-	

COMPLETE SET ...... 95.00

### **Important Notice**

To service Ford and Chevrolet engines with 7/16" oversize valves the following following tools must be added to H302 and H304 Valve Guide Reaming Sets. H2441 Reamer 7/16"+.003" (.441") 4.60

H2441 Reamer 7/16"+.003" (.441")	4.60
H2453 Reamer 7/16"+.015" (.453")	4.60
P86 7/16" Self Expanding Pilot	5.50
P86RM 7/16"+.015" Expand. Pilot	6.00

### H304 Universal Valve Guide Reaming Set

This set will service Ford, Mercury, Lincoln, Chevrolet, Pontiac .003", .015" and .030" oversize valves. Chrysler, DeSoto, Dodge, Plymouth .005", .015" and .030" oversize valves.

#### SET CONSISTS OF

H310 Reamer Guide Assembly	26.00
H310A 3/8" Aligning Bushing	3.90
H310B11/32" Reaming Bushing	3.90
H310B3/8" Reaming Bushing	3.90

Each Reaming Bushing will take care of all oversize reamers in its size.

H310T T-Wrench	2.60
H2347 Reamer 11/32"+.003"	4.60
H2359 Reamer 11/32"+.015"	4.60
H2374 Reamer 11/32"+.030"	4.60
H2376 Reamer 3/8"+.001" (.376")	4.60
H2379 Reamer 3/8"+.005"	4.60
H2379 Reamer 3/8"+.005" H2388 Reamer 3/8"+.013" (.388")	4.60
H2389 Reamer 3/8"+.015"	4.60
H2403 Reamer 3/8"+.028" (.403")	4.60
H2404 Reamer 3/8"+.030"	4.60
P61 Pilot Wrench	4.90
P84L 11/32" Self Expanding Pilot	6.00
DOAD! 11/02 Sell Expanding Filot	
P84RL 11/32"+.015" Self Expand. Pilot	6.00
P85L 3/8" Self Expanding Pilot	6.00
P85RL 3/8"+.015" Self Expand. Pilot	6.00
R38 Two Washers	.20
R59 Spanner Wrench	3.00
R96 Clamp Rod	
A toott Tr	.60
3/32" Hex Wrench	.20
H505B Metal Box	20.00
_	
COMPLETE SET13	4.60

### H305 Universal Valve Guide Reaming Set

SET CONSISTS OF

H304 Universal Set	134.60
H310D Adapter 1/4" square	3.60
H310E Adapter 9/32" square	3.60
R55B Power Drive	95.00
COMPLETE SET23	6 80
	0.00

### H306 Special Valve Guide Reaming Set

FOR FORD, MERC., LINC., CHEV.
WITH 1/2" VALVES

# SET CONSISTS OF H300 Basic Valve Guide Set 69.20 H2347 Reamer 11/32"+.003" 4.60 H2359 Reamer 11/32"+.015" 4.60 H2374 Reamer 11/32"+.030" 4.60 P84L 11/32" Self Expanding Pilot 6.00 P84RL 11/32"+.015" Self Exp. Pilot 6.00 COMPLETE SET 95.00

### **Important Notice**

To service the above engines with 3/8" or 7/16" oversize valves, the following tools must be added.

must be added.	
FOR 3/8" VALVES	
H2376 Reamer 3/8"+.001" (.376") H2388 Reamer 3/8"+.013" (.388") H2403 Reamer 3/8"+.028" (.403") P85L 3/8" Self Expanding Pilot P85RL 3/8"+.015" Expand. Pilot	4.60 4.60 4.60 6.00
FOR 7/16" VALVES	
H2441 Reamer 7/16"+.003" (.441") H2453 Reamer 7/16"+.015" (.453) P86 7/16" Self Expanding Pilot P86RM 7/16"+.015" Expand. Pilot	4.60 4.60 5.50 6.00

### H307 Special Valve Guide Reaming Set

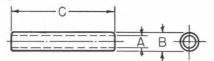
FOR PLYMOUTH, DODGE, DeSOTO, CHRYSLER

SET CONSISTS OF	
H300 Basic Valve Guide Set	69.20
H2379 Reamer 3/8"+.005"	4.60
H2389 Reamer 3/8"+.015"	4.60
H2404 Reamer 3/8"+.030"	4.60
P85L 3/8" Self Expanding Pilot	6.00
P85RL 3/8"+.015" Self Expand. Pilot	
-	

COMPLETE SET ...... 95.00

### VALVE GUIDE REAMING ACCESSORIES

### Replaceable Valve Guides



Popularity Rating	Part No.	I.D.	O.D.	C Lgth.	Application
23	G1240 GL1240	.250 .250	.439 .439	25/6 25/6	Briggs-Stratton, Clinton
28	GL1275	.276	.498	21/16	Special Application
22	GL1276	.2756	.397	115/6	36 H.P. Volkswagen
10	G1310 GL1310	.3115 .3115	.439 .439	1½ 1½	Wisconsin with Replaceable Guides and Ford Falcon and Comet
16	G1311 GL1311	.3115	.439	2½ 2½	Wisconsin, AGN, AHH, VG4D
19	GL1315	.3150	.475	2%	40 H.P. Volkswagen
26	G1316	.3115	.502	11/2	Waukesha ICK Exh.
27	G1317	.3125	.502	111/16	Waukesha ICK Int.
25	GL1347	.3427	.502	3%4	GMC 305 Engine, Exhaust
7	G1345 GL1345	.3435 .3435	.502 .502	2½ 2½	Int., Chev. 265, 383, 327, Chev. II Both; Ford 272, 292, 312 with ½ Exh.; 6 cyl. Rambler Alum. Eng. Both; Pontiac 61-63 Int.
2	G1340 GL1340	.3435 .3435	.502 .502	23/8 23/8	Exh., Chev. 265, 283, 327; Ford Int., 239, 256, 302, 332; Int. 55-59 272, 292, 312; GMC 336 Int.; Pont. 61-63 Exh.
1	G1342 GL1342	.3435 .3435	.502 .502	2½ 2½ 2½	Ford 6 cyl. Both; 1960-62 272, 292 Int.; 1955-59 272, 292, 312 Exh.; GMC 288, 316, 347 Exh.; Pontiac 1955-60 Int.; Buick Spec. 6 Both
4	G1343 GL1343	.3435 .3435	.502 .502	25/8 25/8	Exhaust, Ford, Mercury, Lincoln 239, 256 Eng.; 1960-62 272, 292, 312 Engines
3	G1344 GL1344	.3435 .3435	.502 .502	2½ 2½	GMC 288, 316, 347, 305 Intake; Pontiac 1954-60, Exhaust
17	GL1346	.3435	.518	23/16	All Corvairs
18	G1341 GL1341	$.3455 \\ .3455$	.6578 .6578	23/8 23/8	Oldsmobile, Intake, 54-60 With Replaceable Valve Guides
5	G1373 GL1373	.3735 .3735	.502 .502	23/8 23/8	Ford, Merc., Linc., 332, 352, 406 Both; Exh. 383, 430; Int. 302, 332 with \( \frac{1}{16} \) Exh.
9	G1374 GL1374	.3735 .3735	.502 .502	21/16 21/16	Valiant and Lancer, 170, 225, Both
	G1375 GL1375	$.3735 \\ .3735$	.502 .502	2½ 2½	Lincoln, Mercury 283, 383, 430 Engines, Intake; GMC 336 Exhaust
6	G1370 GL1370	.3745 .3745	.502 .502	2¾6 2¾6	Plymouth, Dodge, Chrysler Engines 260, 270, 315, 325 Both
	G1376 GL1376	.3745 .3745	.502 .502	23/8 23/8	Chry. Corp. Eng. 277, 301, 318, Exh.; 350, 354C-75, 361, 383, 413 Both; Chev. 348, 409 Int.
	G1371 GL1371	.3745 .3745	.502 .502	25/8 25/8	Chry. Engs. 277, 301, 318, Int.; D500 (325) Dart, Both; Chev. 348, 409 Exh.
	G1377 GL1377	.3745 .3745	.502 .502	2½ 2½	GMC 351, 401, 702 Intake; Wisconsin VR4D, VQ4, VR4; Chry. D500 (354) Both
	G1372 GL1372	.3745 .3745	.6263 .6263	2¾ 2¾	Buick, 1954-62 With Replaceable Guides
	G1390 GL1390	.3973 .3973	.6578 .6578	23/8 23/8	Oldsmobile, Exhaust, 1954-60 With Replaceable Guides
	G1431 GL1431	.437 .437	.627 .627	2½ 2½	Exhaust, Ford, 272, 292, 302, 332, Heavy Duty Engines with 1/6 Exhaust
13	G1430 GL1430	.437 .437	.627 .627	25/8 25/8	Ford, Chevrolet and Lincoln with 1/16 Exhaust 1958-60 Ford 401, 477, 534 Engines, Both
24	GL1432	405	.627		GMC 351, 401, 702, Exhaust

The G Series Guides are Cast Iron and list at .50 each. The GL Guides are "Lee-Alloy", a dense longer wearing alloy metal. The GL Series Guides list at .80 each.

### **Tools to Install Valve Guides**

We recommend a  $\frac{1}{2}$ " drill for power, as a power unit with about 400 R.P.M. is required. The roughing reamer operation would be followed with a carbon steel or high speed steel finishing reamer. Both types are listed below. We recommend the high speed steel finishing reamer for volume production.

### Reamers to Install 1/6" O.D. Guide

H3437 Finishing Reamer, Carbon Steel 5.00
H7437 Finishing Reamer, High Speed Steel 13.50
H8432½ Roughing Reamer, High Speed Steel 15.50
1/4" Piloted End For 1/4" 1.D. Valve Guide
Roughing Reamer, High Speed Steel 15.50
5/16" Piloted End For 5/16" 1.D. Valve Guide

### Reamers to Install 1/2" O.D. Guide

### Reamers to Install 5%" O.D. Guide

H3625 Finishing Reamer, Carbon Steel 5.00 H7625 Finishing Reamer, High Speed Steel 13.50 H8619% Roughing Reamer, High Speed Steel 15.50 7/16" Piloted End For 7/16" I.D. Valve Guide

### **Solid Piloted Reamers**

**H2000 SERIES** 

Special length reamers for use with Lee valve guide reaming sets. Reamers Each \$4.60 — Reaming Bushings Each \$3.90 Each Bushing will guide the standard size reamer plus all oversizes of its stamped size. For example, the H310B 5/16" Bushing will guide the H2317, H2327, H2342 Reamers.

Reamer	Size	Bushing	Reamer	Size	Bushing
H2315	$\frac{5}{16} + .003$	H310B5/16	H2377	$\frac{3}{8} + .003$	H310B3/8
H2317	$\frac{5}{16} + .004$	H310B5/6	H2379	$\frac{3}{8} + .005$	H310B3/8
H2328	$\frac{\%+.015}{}$	H310B%	H2384	$\frac{3}{8} + .010$	H310B3/8
H2342	$\frac{5}{6} + .030$	H310B%	H2388	$\frac{3}{8} + .013$	H310B3/8
H2347	$\frac{11}{32} + .003$	H310B <sup>1</sup> / <sub>32</sub>	H2389	$\frac{3}{8} + .015$	H310B3/8
H2349	$\frac{1}{32} + .005$	H310B <sup>1</sup> / <sub>32</sub>	H2394	$\frac{3}{8} + .020$	H310B3/8
H2354	$\frac{1}{32} + .010$	H310B <sup>1</sup> / <sub>32</sub>	H2403	$\frac{3}{8} + .028$	H310B3/8
H2359	$\frac{1}{32} + .015$	H310B <sup>1</sup> / <sub>32</sub>	H2404	$\frac{3}{8} + .030$	H310B3/8
H2364	$\frac{11}{32} + .020$	H310B <sup>1</sup> / <sub>32</sub>	H2441	$\frac{1}{6} + .003$	H310B%
H2374	$\frac{11}{32} + .030$	H310B <sup>1</sup> / <sub>32</sub>	H2453	$\frac{1}{16} + .015$	H310B%
H2376	$\frac{3}{8} + .001$	$H310B_{8}^{3}$	H2468	$\frac{7}{6} + .030$	H310B%

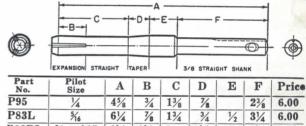
### K. O. LEE OVERSIZE VALVE GUIDE HAND REAMING SETS

H2000 Reamer Set, for Ford, Merc., Chev. ..... 16.00
Includes H2347, 11/32" + .003"; H2359, 11/32" + .015";
H2374, 11/32" + .030" Reamers.

H2002 Reamer Set, for Chrysler Corp. Engs. ... 16.00

H2002 Reamer Set, for Chrysler Corp. Engs. 16.00 Includes H2379, 3/8" + .005"; H2389, 3/8" + .015"; H2404, 3/8" + .030" Reamers.

### **Self Expanding Pilots**



P95	1/4	45/8	3/4	13/8	7/8		23/8	6.00
P83L	5/16	61/4	7/8	13/4	3/4	1/2	31/4	6.00
P83RL	5/6+.015	61/2	11/8	2	11/4		31/4	6.00
P84L	11/32	61/4	7/8	13/4	3/4	1/2	31/4	6.00
P84RL	11/32+.015	61/2	11/8	2	11/4	-	31/4	6.00
P85F	.370	6	7/8	2	3/4		31/4	5.50
P85L	3/8	71/4	7/8	21/4	3/4	1	31/4	6.00
P85RL	3/8+.015	71/2	11/8	21/2	13/4		31/4	6.00
P97R	.397	57/8	7/8	21/8	5/8		31/8	6.00
P86RM	7/6+.015	71/2	1	21/2	3/4	1	31/4	6.00
P86	7/16	61/4	1	21/2	3/4		3	5.50
P97	13/32	71/4	7/8	21/4	3/4	1	31/4	6.00

A complete listing of pilots is included in K. O. Lee Form SG-57.

### **Valve Guide Drivers**

PRICE EACH \$2.00

	******		9 -	3	-	-1-	
N-	<b></b>	D	····	A) C		<del> </del>	
No. G2250	1/4	B .240	C .430	No. G2344	11/32	B .334	.625
G2275 G2276	7MM 7MM	$.265 \\ .265$	.387 .625	G2375 G2376	3/8 3/8	$.365 \\ .365$	.490 .615
G2312	5/16	.302	.430	G2397	.397	.388	.625
G2313 G2343	5/16 11/ <sub>32</sub>	$.302 \\ .334$	$\begin{array}{c} \textbf{.625} \\ \textbf{.490} \end{array}$	G2437 G2500	7/16 1/2	.427 $.490$	.615

### Valve Guide Reamers

#### SOLID TYPE H1000 SERIES

Number Size	Number	Size	Number	Size
H1236 6MM	H1334	81/2 MM	H1393	10MM
H1250 1/4"	H1343	11732"	H1397	.397"
H1255 61/2 MM	H1353	11/32"+.010	H1406	13/32"
H1275 7MM	H1363	11/32"+.020	H1437	7/16"
H1281 9/32"	H1354	9MM	H1472	12MM
H1295 71/2 MM	H1373	3/8'' — .002	H1500	1/2"
H1312 5/16"	H1374	91/2 MM	H1625	5/8"
H1315 8MM	H1375	3/8"		

### GUIDE APPLICATION DATA

THE VALVE GUIDES LISTED ARE OUR "GL LEE-ALLOY" SERIES, MADE OF A DENSE LONGER WEARING ALLOY METAL. MOST OF THESE SIZES ARE ALSO AVAILABLE IN CAST IRON "G" SERIES. SEE LISTING ON PAGE 3.

Year	Model		Guides Exhaust	Roughing Reamer	Finishing Reamer	g Pilot Size	Pilot No.	Valve Guide Driver	Valve Guide Reame
	1, 121,	BUICI	K						
1954-62	All Models Except Special			Not Req.	Not Req	. 3/8	Not Req.	G2376	H137
	BRIGGS AND ST	RATT	ON AI	ND CL	INTO	N			
954-62	All Models 1/4" Stem No Factory Guide		GL1240		H7437	1/4	P95L	G2250	H125
	CH	IEVRO	LET						
955-63	All V8 Pass. and Trucks; 265, 283, 327 Engines	GL1345	GL1340	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	H134
958-62	All 348, 409 Engines		GL1371	H8494¾	H7500	3/8	P85L	G2375	
960-63	Corvair (Replaceable Guides)	GL1346		Not Req.	Not Req		Not Req. P84L	G2343 G2343	
962-63	Chevy II		GL1345	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	FOTL	02343	11137
	CHRYSLER CO					3/	DOEI	G2375	H137
954-56	Plymouth, Dodge; 260, 270, 315, 325 Engines	GL1370 GL1371	GL1370 GL1376	H8494% H8494%	H7500 H7500	3/8 3/8	P85L P85L	G2375	
956-62	Plymouth, Dodge, 277, 301, 318 Engines	GL13/1	GL1376	ПОТЭТ/8	117500	/8	TOJE	02373	11137
958-62	383, 413 Engines (D500-354 Takes GL1377)	GL1376	GL1376	H84943/8	H7500	3/8	P85L	G2375	H137
956-58	Dodge, DeSoto; 325 Engine (D500)	GL1371	GL1371	H84943/8	H7500	3/8	P85L	G2375	H137
960-63	Valiant and Lancer	GL1374	GL1374	H8494%	H7500	3/8	P85L	G2375	H137
	COMET	AND	FALC	ON					
960-63	All Models; 144, 170 Engines	GL1310	GL1310	H84325/6	H7437	5/16	P83L	G2312	H131
	FORD CO	MPAN	Y EN	GINES					
954-62	6 Cyl. Pass. and Trucks; 223 Eng.; and 279 V8 Truck	GL1342	GL1342	H8494 <sup>11</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	H134
954-55	V8 Passenger and Trucks; 239, 256 Engines	GL1340	GL1343	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	
955-59	V8 Passenger and Trucks, 272, 292, 312 Engines		GL1342	H8494 <sup>11</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	
960-62	V8 Passenger and Trucks; 272, 292, 312 Engines		GL1343	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	
957-63	V8 Pass. and T-Bird, Merc.; 332, 352, 390, 406 Eng.		GL1373	H8494¾	H7500	3/8	P85L	G2375	
958-62	Thunderbird, Lincoln, Mercury; 383, 430 Engines		GL1373	H8494¾	H7500	3/8	P85L	G2375	
956-57	H. D. Truck with Sodium Valves; 272, 292 Engines	GL1345	GL1431	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	
	EXHAUST	CI 1240	CI 1431	H8619%	H7625	7/16	P86	G2437	
956-57	H. D. Truck with Sodium Valves; 302, 332 Engines	GL1340		H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/ <sub>32</sub>	P84L	G2343 G2375	
958-62	H. D. Truck with Sodium Valves; 302, 332 Engines	GL13/3	GL1431	H8494¾ H8619¾	H7500 H7625	3/8 7/6	P85L P86	G2437	
958-62	EXHAUST H. D. Truck with Sodium Valves; 401, 477, 534 Eng.	GL1430	GL1430	H861976	H7625	7/16	P86	G2437	
750-02		C TRU							
955-60	All V8 with 288, 316, 347 Engines		GL1342	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	H134
957-59	All V8 with 336 Engine	GL1340		H849411/32	H7500	11/32	P84L	G2343	
960-63	All V6 with 305 Engine	GL1344		H849411/32	H7500	11/32	P84L	G2343	H134
960-63	All V6 with 351, 401, 702 Engines		GL1432	H8494%	H7500	3/8	P85L	G2375	H137
	EXHAUST			H86197/6	H7625	7/16	P86	G2437	H143
	OL	DSMO	BILE			Int. 11/32	Not Req.	G2344	ш124
954-60	All Models (with Replaceable Guides)	GL1341	GL1390	Not Req.	Not Req.		Not Req.	G2397	
	The state of the s	PONTI	AC						
955-60	All V8's		GL1344	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	
1961-63	All V8's and 4 Cylinder Tempest		GL1340	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	
963	421 H. O. Engine		GL1345	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	H134
		AMBL							
959-62	Aluminum OHV, 6 Cylinder		GL1345	H8494 <sup>1</sup> / <sub>32</sub>	H7500	11/32	P84L	G2343	H134
		LKSW							,
953-60	All Models, 36 H.P. (Replaceable Guides)		GL1276	Not Req.		. 7MM	Not Req.	G2275	
1960-63	All Models, 40 H.P. (Replaceable Guides)		GL1315	Not Req.	Not Req	. 8MM	Not Req.	G2312	H131
		ISCON				9			
	ACN, BKN, VH4, VE4, VF4, TE, TF		GL1310	H8432%	H7437	5/16	P83L	G2312	
	AGN, AHH, VG4D VR4D, VQ4, VR4		GL1311	H8432%	H7437	5/16 3/	P83L	G2312	
	VVAD VDA VVA	GL13//	GL1377	H8494%	H7500	3/8	P85L	G2375	піз

NOTE: H310G½ Round Drive and H310B¼ Reaming Bushing are used with Roughing and Finishing Reamers. We recommend a ½" drill for power, as a power unit with about 400 R.P.M. is required. Roughing Reamer operation is followed with a Finishing Reamer. After Guide has been installed, our H1000 Series Solid Reamers as listed in extreme right column above, may be used to ream I.D. of Guide.

### K. O. LEE COMPANY, ABERDEEN, SO. DAKOTA

# Now! see the NEW! R700 Special Reseater Set



The R700 Special Reseater Set is designed to service foreign cars, small stationary engines, and engines where valve guide is too near top of seat and interferes with cutting recess.

NOTE: The R700 Set DOES NOT include Pilots, Driver Heads or Cutters for Rings. It is necessary that the purchaser order these items separately, specifying desired size of each for use on selected motors.

Model R700 Special Reseater Set consists of the following items:

R33 R34 R38 R47 R56	Driver Handle Spacer Collar Spacer Collar Washer 4 @ .10 Wrench Wrench Spanner Wrench	.20 .20 .40 .45 .20	R68 R69 R70 R95 R96	Screw Feed Stop Collar Drive Collar Coupling Ring Extractor Clamp Rods 2 @ .65 Box	1.80 2.10 1.30 2.80 1.30	R710 **Universal Guide R712 Reseater Shank Washer 2 @ .20   ½¼ Washer 2 @ .20   ½x¼ SAE Hex Soc. Cap Sc.   ½x1 SAE Hex Soc. Cap Sc.   ½x½ SAE, Hex Soc. (2p Sc.   ½x½ ST. Rd. Hd. Sc. NP (2)   %x1½ USS Hex Cap Sc. (2)	.40 .20
R59	Spanner Wrench	3.15	R504B	Box	23.00	716X 1%	055 Hex Cap 5c. (2)

R700 Special Reseater Set -\$93.00 \$95.00 R55B Power Drive 115 or 230V (Please specify voltage)

### RESEATER PILOTS

EACH \$3.50 EXCEPT R216, R216P1 \$4.10, MM PILOTS \$4.65 6MM .2362 R211P3 R208M14 R211P10 250 R208 1½+.015 1½+.030 ¾-.002 .3577 R208P6 6.5MM .2559 R211P15 R209M5 7MM .2756 R209 .28125 R212M2 .373 R209P15 7.5MM .2953 R212M1 9.5MM .3740 ₹₀—.002 R210M2 .3105 R212 3/4+.001 .376 R212P1 R210M1 ₹<sub>6</sub>—.001 .3115 %+.001 %+.002 %+.005 %+.015 10MM R212P2 .377 R210 3125 **%+.001** R210P1 R210P2 3135 R212P5 %+.002 8MM R212P15 .3900 .3145 R210P3 .315 R213M12 .3937 %+.004 %+.015 %+.030 8.5MM 13/2-.002 .40425 R210P4 .3165 .3275 R212P30 405 R210P15 40625 R210P30 R213 R214M2 .4355 R211M9 .3347 R214M1 R211M3 11/32-.003 .34075 - 002 .34175 R214 R211M2 .34275 R214P1 R211M1 -.001 11/32 .4395

11/32 + .002 .34575 R211P2 Pilots and Driver Heads listed normally used to service small engines. See Form R60 for complete listing.

R214P2

R216P1

 $\frac{1}{2} + .001$  .501

.34375

### RESEATER CUTTERS

EACH \$4.10

R730	15/6"	Special	Cutte
R731	31/32"	Special	Cutte
R732	1"	Special	Cutte
R734	11/6"	Special	Cutte
R736	11/8"	Special	Cutte
R738	13%	Special	Cutte
R740	11/4"	Special	Cutte
R742	15/6"	Special	Cutte
R743	123/4"	Special	Cutte
R744	13/8"	Special	Cutte
R746	1%/"	Special	Cutte

### DRIVER HEADS

R15H	\$1.50, Others	\$1.70
<b>R15H</b>	Driver Head,	15/6X3/4
	Driver Head,	
<b>R17H</b>	Driver Head,	11/8 x 3/4
<b>R18H</b>	Driver Head,	$1\frac{1}{4}x\frac{3}{4}$
<b>R19H</b>	Driver Head,	1%x3/4

R700 Reseater Tools are shown servicing a lawn mower type engine upper left and a foreign car engine lower left. R55B Power Drive shown is \$95.00 extra.

R211

K.O. Lee Company
ABERDEEN, SO. DAKOTA

### P202 Special

### Valve Seat Grinder Set



**Grinding Wheel** 

Holders

P191 4" Long, 1/2" Hex Soc.,

%" Threaded End. Standard. P398 4" Long, 1/8" Small Dia., 1/2" Hex Soc., %" Threaded End Available Extra Cost.

### P422 Utility Driver.

1/4 H.P. w/safety button switch & 10 ft. 3-conductor cable, 115V.

### **Designed to Service Small Engines, Power Mowers, Foreign Cars** and Motorcycles

Model P202 Special Valve Seat Grinder Set Standard Equipment Pilot Wrench .... 4.90 P61 P191 Gr. Wh. Holder 7.80 1/4" Pilot ..... P95S 6.00 Utility Driver .... 72.00 P522 %2" Pilot ..... P96S 6.00 P223 Hexagonal Ball 5/6" Pilot ..... Terminal for 15/32" P83S P372 Wh. Dress. with Shaft 4.20 P176D Dia. Sc. .. 48.00 P226\* 1" Grind. Wheel P227\* 116" Grind. Whl. 2.60 P189 Tube Brush for 2.40 P228\* 11/8" Grind. Whl. 2.40 Cleaning Holder P190B Adapter Bushing N.C. P229\* 1%" Grind. Whl. 2.40 P231 11/4" Grind. Whl. 2.40 (%" to 11/6") 1%" Grind. Whl. 2.40 Attached to P191

#### Complete Set \$165.00

P500B METAL BOX AVAILABLE \$23.00 EXTRA Milimeter pilots or other size pilots and grinding wheels can be substituted for standard equipment items.

SELE EXPANDING DILOTO

		966		-7.			· ·		11.		
Part No.	Pilot Size	Lgth. 1	Price	Part No.	Pilot Size	Lgth.	Price	Part No.	Pilot Size	Lgth.	Price
P95	1/4	45/8		P85	3/8	6		P8255	6½MM	45/8	
P95S	1/4	33/4		P85S	3/8	41/2		P8275	7MM	45/8	
P96	%32	45/8		P97R	.397	51/8		P8295	7½MM	51/4	
P96S	%32	33/4		P97	13/32	6		P8315	8MM	51/4	
P83	5/16	51/4		P86	7/16	61/4		P8334	81/2 MM	51/4	
P83S	5/16	4%		P86M	1/16	71/2		P8354	9MM	51/4	
P83L P84	5/16 11/32	6¼ 5¼		P86L P86S	1/6 1/6	8½ 5¼			9½MM	6	
P84S	11/32	41/2		P87	1/2	61/4		P8393	10MM	6	
P84L	11/32	61/4		P8236	6ММ	45/8		P8820	.820	43/4	

Grinding Wheels and Pilots listed are those that may be required to service small engines. See Seat Grinder Catalog Form SG for complete listing.



### P372 Dresser

The swivel is graduated with positive stops for 0, 15, 30, 45, 60, 75 & 90 degrees.

### VALVE SEAT GRINDING WHEELS

K-O Wheels with 11/16" S.A.E. threads can be used on K-O Holder No. P191, or holders having a 9/16" threaded end made by other manufacturers, by using a No. P190B Bushing (9/16" to 11/16"). This bushing is furnished no charge to purchasers of K-O Wheels.

_	NERAL JRPOSE	50		JGHIN HEELS	_		ISHIN HEELS	_	
No.	Diam.	Price	No.	Diam.	Price	No.	Diam.	Price	
P224*	7/8"	2.60	P224R*	7/8"	2.60	P224F*	7/8"	2.60	
P225*	15/16	2.60	P225R*	15/16"	2.60	P225F*	15/16"	2.60	
P226*	1 "	2.60	P226R*	1 "	2.60	P226F*	1 "	2.60	
P227*	1 1/6"	2.40	P227R*	1 1/6"	2.40	P227F*	1 1/6"	2.40	
P228*	1 1/8"	2.40	P228R*	1 1/8"	2.40	P228F*	1 1/8"	2.40	
P229*	1 3/6"	2.40	P229R*	1 3/6"	2.40	P229F*	1 3/6"	2.40	
P231	1 1/4"	2.40	P231R	1 1/4"	2.40	P231F	1 1/4"	2.40	
P232	1 5/6"	2.40	P232R	1 1/6"	2.40	P232F	1 5/6"	2.40	
P233	1 3/8"	2.40	P233R	1 3/8"	2.40	P233F	1 3/8"	2.40	
P234	1 7/6"	2.40	P234R	1 1/6"	2.40	P234F	1 1/6"	2.40	

\*Wheels have %"-16 thd. All other K-O Wheels have \"-16 thd. Wheels P224, P225, P226, P227, P228 and P229 are designed for small engine service. P398 ½" hex socket %" threaded end or P399 ½" hex socket %" threaded end wheel holders are small diameter and will follow wheel into valve recess.

K.O. Lee Company, Aberdeen, S.

### K.O. Lee Connecting Rod Aligners

FEATURES

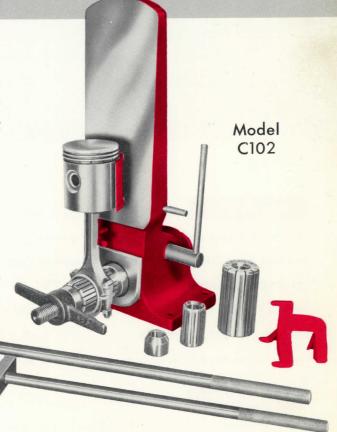
- MODERN DESIGN
- SIMPLE TO USE
- NO LONG SETUPS OR REMOVALS
- FULL-BEARING
   EXPANDING SLEEVES
- STURDY BENDING BARS
- HEAVY, WELL-BALANCED
   RIBBED BASE
- LIFETIME CONSTRUCTION
- CHECK FOR BEND, TWIST AND OFFSET WITH ONE SETTING

Available in seven different models with a wide choice of style, size or capacity. The K.O. Lee line of connecting rod aligners includes two vertical and five horizontal models. All models feature the exclusive "K.O. Lee" Qualities.

# VERTICAL CONNECTING ROD ALIGNERS

Model C101 Rod bearing range is 1½" to 2¾" with C26A and C28 expanding sleeves. The C31A bending bar has ½" and ¾" openings. Net weight is 60 pounds. Shipping weight is 72 pounds.

Model C102 Rod bearing range is 1½" to 3½" with C26A, C27A and C28 expanding sleeves. C31A bending bar has ½" and 5%" openings and the C31B bending bar has ¾" and 7%" openings. Net weight is 68 pounds. Shipping weight is 80 pounds.



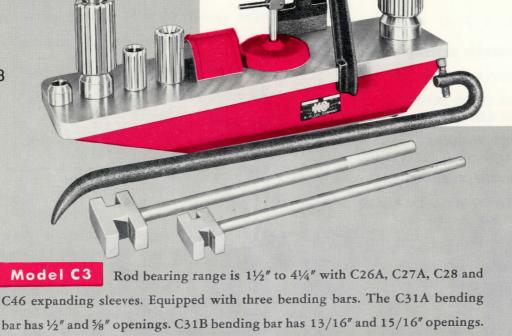


K. O. LEE COMPANY, ABERDEEN, SOUTH DAKOTA

valve refacers • valve seat grinder sets • reseater sets valve seat insert rings • rod aligners • stud wrenches wheel dressers • valve guides • valve guide reaming tools

HORIZONTAL CONNECTING ROD ALIGNERS

Model C3



Large C33 bending bar has a maximum opening of 1-7/16". Large C12 base is 7" x 27" x 5". Complete with checking gauge and checking "V". Net weight

Model C1 Rod bearing range is  $1\frac{1}{2}$ " to  $2\frac{3}{8}$ " with C26A and C28 expanding sleeves. One bending bar, C31A with  $\frac{1}{2}$ " and  $\frac{5}{8}$ " openings. Complete with checking gauge and checking "V". C11 base is 5-1/16" x 21" x  $3\frac{3}{4}$ ". Net weight 42 pounds. Shipping weight 46 pounds.

135 pounds. Shipping weight 162 pounds.

Model C1L Rod bearing range is  $1\frac{1}{2}$ " to  $2\frac{3}{8}$ ". Identical to C1 rod aligner only C12 base  $(7'' \times 27'' \times 5'')$  is supplied. Net weight 94 pounds. Shipping weight 121 pounds.

Model C2

Rod bearing range is 1½" to 3½" with C26A, C27A and C28 expanding sleeves.

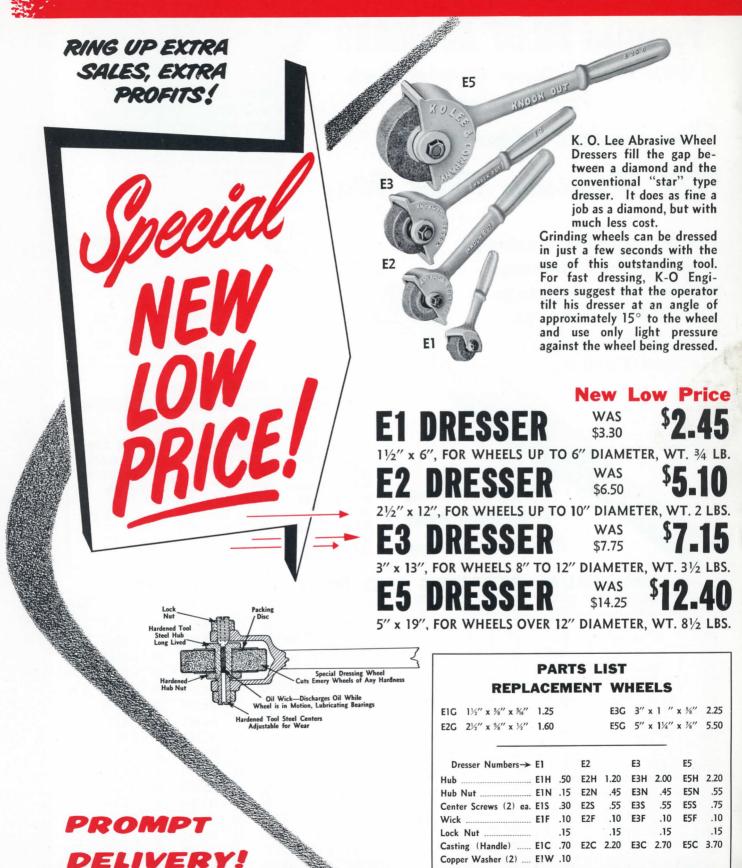
Two bending bars, C31A with ½" and ½" openings and C31B with 13/16" and 15/16" openings.

Checking gauge and "V". Net weight 51 pounds.

Shipping weight 55 pounds.

Model C2L Rod bearing range is  $1\frac{1}{2}$ " to  $3\frac{1}{8}$ ". Identical to C2 rod aligner only large C12 base  $(7\text{ ''} \times 27\text{ ''} \times 5\text{ ''})$  is supplied. Net weight 103 pounds. Shipping weight 113 pounds.

# Abrasive Wheel Dressers



WD-65 — 10M — W

# "Z.O. Lee" REAMERS

### **Precision PILOT REAMERS**

With Double Taper Counter Sunk **Pilot Bushings** 

For perfect alignment-

REAM Precision Pilot Way

**Spring Shackle Bushings Water Pump Bushings** Pitman Arm Bushinas **Piston Pin Bushings** King Bolt Bushings Tie Rod Bushings

K. O. Lee Precision Pilot Reamers are inexpensive and quickly pay for themselves in time saved and quality of results.

> **Shear Cutting Precision Pilot Positive Setting**



SET NO. H17

### REAMER SETS

Precision Pilot Bushing guides front—parallel blades guide back assuring perfect alignment. Blades set at correct angle to shear cut, eliminate chatter, give perfect finish. Easily adjusted, they stay parallel and hold size. Reamers sizes overlap—complete set of 16 covers full range %" to 1%".

Reamer Set H16 (4 reamers H1 to H4) range 1/4" to 1/4"

**Reamer Set H17** 

(7 reamers H5 to H11) range 11/6" to 11/6"

### **Valve Guide Reamers**

### SOLID TYPE H1000 SERIES

Number Size	Number Size	Number Size
H1236 6MM	H1334 8½MM	H1393 10MM
H1250 1/4"	H1343 11/32"	H1397 .397"
H1255 6½MM	H1353 $\frac{1}{2}$ "+.010	H1406 13/32"
H1275 7MM	H1363 $\frac{1}{32}$ "+.020	H1437 1/6"
H1281 32"	H1354 9MM	H1472 12MM
H1295 7½MM	H1373 ¾"—.002	H1500 ½"
H1312 %"	H1374 9½MM	H1625 %"
H1315 8MM	H1375 ¾"	

### INDIVIDUAL REAMERS AND REPAIR PARTS LIST

Reamer No.	Capacity Size	Reamer Length	Blades Overall	No. of Blades	Complete Each	Part No.	Blades Set	Part No.	Nuts Each	Part No.	Collars Each	Part No.	Bush. Each
H1	1/6"- 1/2"	91/4"	2"	5		HR201A	2.25	HR249	.45	HR302	.30	HR365	1.40
H2	1/2"— %6"	9¼"	2"	6		HR201B	2.70	HR250	.45	HR303	.30	HR366	1.40
H3	%6"— 5%"	9¼"	2"	6		HR201C	2.70	HR227	.45	HR277	.30	HR367	1.40
H4	5/8"— 11/6"	91/4"	2"	7		HR201D	3.10	HR228	.45	HR278	.30	HR368	1.40
H5	11/6"— 3/4"	121/4"	2"	7	SE	HR201E	3.10	HR229	.45	HR279	.30	HR369	1.40
*H6	.730"— 1%"	121/4"	2"	7	9.11	HR207A	3.50	HR230	.45	HR280	.30	HR370	1.40
H7	13/6"— 1/8"	121/4"	2"	7	~ AP	HR207B	3.50	HR231	.45	HR281	.30	HR371	1.50
*H8	.860"— 156"	121/4"	2"	7		HR207C	3.50	HR232	.45	HR282	.30	HR372	1.60
*H9	.915"—1 "	121/4"	2"	7	RO RE	HR207D	3.50	HR233	.45	HR283	.30	HR373	1.75
*H10	.985"—1 1/6"	12¼"	2"	7	ZP	HR207E	3.50	HR251	.45	HR304	.30	HR374	1.90
H11	1 1/6"—1 1/8"	121/4"	2"	7	720	HR207F	3.50	HR252	.45	HR305	.30	HR375	1.95
H12	1 1/8"—1 1/4"	13 "	3"	7	200	HR208A	3.85	HR234	.60	HR284	.35	HR376	2.20
H13	1 1/4"—1 3/8"	13 "	3"	7	CES	HR208B	4.25	HR235	.60	HR285	.35	HR377	2.70
H14	1 3/8"—1 1/2"	13 "	3"	7	<b>~</b> '⊣	HR208C	5.00	HR236	.75	HR286	.45	HR378	3.30
H15	1 1/2"—1 5/8"	13 "	3"	7		HR208D	5.40	HR237	.85	HR287	.55	HR379	3.70
H15A	1 5/8"-113/6"	15 "	3"	7		HR208E	6.90	HR253	1.25	HR306	.80	HR380	4.40
H15B	113/6"-2 1/6"	19%"	3"	7		HR208F	7.70	HR254	1.25	HR307	.80	HR381	4.40

\*H6 reams Chev. King Bolt Bushing .735". \*H8 reams Chev. 6 Piston Pin Bushing .866". \*H9 reams Chev. 6 Truck King Bolt Bushing .922". \*H10 reams Chev. 6 Piston Pin Bushing .991". REAMER BOX: No. 18B reamer box has space for eleven reamers varying in size from H1 to H15A.

RESHARPENING CHARGES FOR REAMERS
CARBON STEEL

Adjustable and Solid Type, Our Make, to 1/2" inclusive Adjustable and Solid Type, Our Make, above 1/2" to 1-1/2" inclusive Adjustable and Solid Type, Our Make, above 1-1/2"

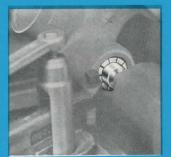
"K.O. Lee"

**Expanding Mandrels** 

Perfected for: • MILLING

TURNING

GRINDING



Production turning 45° on 11 lb casting held on M46 Expanding Mandrel.

A time-tested tool for grinding, turning and milling operations on the production line, in the tool room, maintenance, repair or home work shop. "K. O. Lee" Expanding mandrels will hold work from thin sleeves and bushings to heavy castings and forgings. Sizes to fit  $\frac{3}{8}$  to  $\frac{51}{2}$  inch hole.

### AVAILABLE IN TWO SERIES

**GENERAL PURPOSE SERIES** Five mandrels with range from  $\frac{3}{8}$  to  $2\frac{1}{2}$  inch hole. Recommended for tool room, home shop and light production work.

**HEAVY-DUTY SERIES** Range from 11/16 to  $5\frac{1}{2}$  inch hole. Recommended for production line operations including heavy roughing cuts.



Grinding 45° angle holding .001" concentricity. Using M3 Expanding Mandrel.

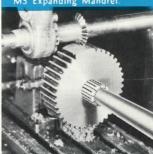
Turning small piece in tool room. I. D. 15/32" held on MO Expanding Mandrel.

### **FEATURES**

LARGE BEARING SURFACE on all sleeves provides a positive grip on heavy jobs . . . prevents slip and chatter and holds thin sleeves and bushings without distortion. Work can be held in any position on sleeve and may overhang either or both ends for facing operations.

PRECISION GROUND arbors and sleeves provide accuracy of .001 inch or better. Large bearing surfaces minimize wear.

AUXILIARY CENTERS (right end of above illustration) are a "K. O. Lee" feature which provide: large bearing surface, oil reservoir, prevent damage to arbor center, prolong arbor life and are inexpensive to replace.



Milling Gear held on "K. O. Lee" Expanding Mandrel Ideal for Tool Room use.

### FOR REPAIR SHOP - TOOL ROOM - PRODUCTION



### YOU CAN GET "Z.O. Lee" EXPANDING MANDRELS SINGLY OR IN SETS

There is a "K. O. Lee" Expanding Mandrel Set for every shop. General Purpose and Heavy Duty Mandrel sets cover a wide range of hole size and are ideal for tool room, maintenance and repair shop, and job shop. Any Expanding Mandrel may be purchased separately for production operations. A full set of "K. O. Lee" Expanding Mandrels will eliminate making and stocking straight arbors for every job.

#### "K. O. LEE" EXPANDING MANDREL SETS GENERAL PURPOSE

Three smallest general purpose mandrels—M0, M1, M2 and M201B Box—range 3" to 1"—shipping wt. 3 lbs. M90 and M201B Box—range %" to 1"—shipping wt. 3 lbs.

M100 Four general purpose mandrels—M0, M1, M2, M3 and
M101B Box—range %" to 1%"—shipping wt. 9 lbs.

M100W Same as M100 less auxiliary centers

M100X Three general purpose mandrels—M1, M2, M3 and
M201B Box—range ½" to 1%"—shipping wt. 9 lbs.

M101 Largest general purpose set—M0, M1, M2, M3, M4 and
M101B Box—range %" to 2½"—shipping wt. 18 lbs.

M101W Same as M101 less auxiliary centers

#### HEAVY DUTY

M200 Four mandrels; two heavy duty—M0, M1, M25, M26 and M201B Box—range %" to 1"—shipping wt. 4 lbs. M200W Same as M200 less auxiliary centers

M200W Same as M200 less authors centers

M200X Four mandrels; two heavy duty—M1, M2, M35, M36 and

M101B Box—range ½" to 1%"—shipping wt. 12 lbs.

M201 Two heavy duty mandrels—M35, M36 and M201B Box—

range 1" to 1%"—shipping wt. 8 lbs.

M201W Same as M201 less auxiliary centers
M202 Two heavy duty mandrels—M45, M46 and M101B Box—
range 1%" to 2½"—shipping wt. 21 lbs.

M202W Same as M202 less auxiliary centers

#### MANDREL BOXES

M201B Box for sets M90-M200-M200W-M201-M201W-M100X M101B Box for sets M100-M101-M100W-M101W-M202-M202W-M200X

### SPECIFICATIONS OF "Z.O. Lee" EXPANDING MANDRELS

				00											
	COMPLETE MANDRELS			ARBORS ONLY			SLEEVES ONLY			AUXILIARY CENTERS					
	NO.	RANGE INCHES	WEIGHT POUNDS	PRICE	NO.	LENGTH INCHES	TAPER PER FT.	WEIGHT POUNDS	PRICE	NO.	LENGTH INCHES	WEIGHT POUNDS	PRICE	NO.	PRICE
GENERAL	M0 M1 M2 M3 M4	3/8 to 1/2 1/2 to 11/16 11/16 to 1 1 to 19/16 19/16 to 21/2	3/16 3/8 1 23/4 9		M0A M1A M2A M3A M4A	4 <sup>1</sup> / <sub>2</sub> 5 <sup>3</sup> / <sub>4</sub> 9 <sup>1</sup> / <sub>4</sub> 12 <sup>1</sup> / <sub>4</sub> 16 <sup>3</sup> / <sub>4</sub>	5/8" .775" 3/4" 15/6" 1 1/8"	1/8 1/4 3/4 21/4 71/2		M0S M1S M2S M3S M4S	11/ <sub>4</sub> 11/ <sub>2</sub> 21/ <sub>2</sub> 3 41/ <sub>4</sub>	1/32 1/16 1/8 3/8 11/4		M0AC M1AC M2AC M3AC M4AC	
MANDRELS	M25 M26 M35 M36 M45 M46 M5B M5C	11/6 to 27/32 27/32 to 1 1 to 19/32 19/32 to 19/16 19/16 to 21/32 21/32 to 21/2 21/2 to 31/4 31/4 to 4	3/4 11/8 23/4 4 63/4 163/4 171/4 301/4		M25A M26A M35A M36A M45A M46A M5A	8 81/4 121/4 121/4 151/2 151/2 173/4 18	1/2" 1/2" 1/2" 1/2" 5/8" 5/8" 1 1/8" 1 1/8"	1/2 3/4 2 23/4 51/4 83/4 121/4 251/4		M25S M26S M35S M36S M45S M46S M5S M5S	2 <sup>1</sup> / <sub>4</sub> 2 <sup>1</sup> / <sub>2</sub> 3 <sup>1</sup> / <sub>4</sub> 3 <sup>1</sup> / <sub>4</sub> 4 <sup>1</sup> / <sub>4</sub> 7	1/8 3/16 1/4 9/16 13/16 11/2 5		M25AC M26AC M35AC M36AC M45AC M46AC M5AC	
	M55	31/4 to 43/4	421/4		M5-6A	18	11/8"	251/4		M5S M6S	7 7	5 12		M6SC	
DOTY	M6B M6C	4 to 4 <sup>3</sup> / <sub>4</sub> 4 <sup>3</sup> / <sub>4</sub> to 5 <sup>1</sup> / <sub>2</sub>	38 53		M5-6A M6A	18 18 <sup>1</sup> / <sub>4</sub>	1½" 1½"	25 <sup>1</sup> / <sub>4</sub> 40	7-1	M6S M6S	7	12 12		M6SC** M6SC**	
HEAVY	M5	21/2 to 4	421/2		M5A M5-6A	17 <sup>3</sup> / <sub>4</sub> 18		371/2		M5S	7	5		M5AC	
Ī	M6	4 to 51/2	78		M5-6A M6A	18 18 <sup>1</sup> / <sub>4</sub>		651/4		M6S	7	12		M6SC**	
	М7	21/2 to 51/2	941/2		M5A M5-6A M6A	17 <sup>3</sup> / <sub>4</sub> 18 18 <sup>1</sup> / <sub>4</sub>		771/2		M5S M6S	7 7	5 12		M6SC M5AC	

compressing sleeve M6S.

INSTRUCTIONS: If an auxiliary center sticks on the arbor, use a wrench to loosen it; don't hammer it loose! Oiling the hole of the auxiliary center will help to alleviate this difficulty.

### K. O. LEE CO. NUMERICAL PRICE LIST

### Applies to All Lee Equipment and Tools Except Tool and Cutter Grinders

Prices On Small Parts Not Listed Can Be Found In Price List MPL-100

### **Prices Effective November 1, 1964**

All Prices Subject to Change Without Notice — Typographical Errors Subject to Price Correction



### K. O. Lee Company - Aberdeen, S. D.

20 394	Avian				141			100		337.35	
rt Descripti	on Price			Part No. Description		Part No. D	escription	List Price	Part No.	Description	Lis Pric
A14 Switch R	eplaced by	C1L Rod Aligner		ALVE GUIDE I			11/32 + .020 Reamer			Butt Grinder Air Chuck	
8295K7 Swit		C2 Rod Aligner C2L Rod Aligner		All Sizes	2.00	H2376	Reamer	4.60	K675	P Valve Wag	on
A36 Spec. Wh	eel _ 2.50	C3 Rod Aligner	208.00	ADJ. PILOT RE	AMERS		Reamer		K675	WC Valve W	_ 61.0
37 Spec. Wh 173 Dia. Nik	eel 1.80	C12 Base	63.00	H1 Reamer H2 Reamer	8.00 8.20	H2384	Reamer	4.60	wit	th casters	_ 91.0
269D Dia. S	Sc.	C21 Cone	11.00	H3 Reamer	8.40		Reamer			7 Data Plate 1900 Cover	
10-32 Threa 450 Drill C	huck 9.50	C26A Sleeve	14.50	H4 Reamer H5 Reamer	9.00	H2394	Reamer	4.60	Mo	Mandrel	12.0
451 Arbor 451B Adapte			26.25	H6 Reamer H7 Reamer	9.40	H2404	Reamer	4.60	M0A	Arbor	_ 3.5
451P Adapte	er 2.40	C28C Sleeve	6.50	H8 Reamer	10.00		Reamer			Sleeve C Center	
451T Adapte			.95	H9 Reamer	10.40		7/16 + .030				
452B Adapte	er 1.80	C30 Arbor	23.00 5.00	H11 Reamer	11.20		Fin. Reamer		M1A	Mandrel Arbor	_ 4.
452S Arbor	2.60	C31B Bar	6.30	H12 Reamer	14.45	H3500	Fin. Reamer	5.00	M1A M1S	C Center Sleeve	_ 2. _ 7.
452T Adapter 453 Adapter	2.60	C32 Cone C33 Bar	9.80	H14 Reamer	16.15						
453B Adapte	er 1.80	C34 Cone	2.70	H15 Reamer	18.35		Below are Fin. Reamer			Mandrel Arbor	
453S Arbor 453T Adapte	2.60 er 1.30	C41 Assembly	16.80	H15A Reamer - H15B Reamer -	33.00	H7500	Fin. Reamer	13.50	M2A M2S	C Center Sleeve	_ 2.
454S Arbor	2.60	C41H Nut	1.50 6.30	H16 Reamer Set H17 Reamer Set	35.30		Fin. Reamer Rgh. Ream				
455S Arbor 456 Drill C	Chuck 9.50	C44 Wrench	2.40	H18B Reamer	Box 11.55	H8494	Rgh. Ream.	15.50		Mandrel Arbor	
458B Arbor 458D Arbor			40.00	H300 Reamer S H302 Reamer Se	et 69.20	H8619	Rgh. Ream	15.50	M3A	C Center	2.
459 Drill C	Chuck 9.50	See MPL-100		H304 Reamer Se	et _134.60		older Collet			Sleeve	
460 Drill ( 461 Arbor				H305 Reamer Se H306 Reamer Se	et _ 95.00	K43CL	Collet	15.00		Mandrel Arbor	
461B Adapte	er 1.80	C101 Aligner C101A Arbor, Co		H307 Reamer Se H310 Reamer	cd 26.00		Collet		M4A	C Center	3.
461T Adapte	er 1.30	C101B Base	45.50			K43E	Collet	15.00	M4S	Sleeve	19.
462 Arbor 462B Adapte	er 1.80	C101L Screw	4.20	H310A Bushing H310B5/16 Bush					M5 M5-6	Mandrel A Arbor	150.
462S Arbor	2.60	C101NT Nut	2.20	H310B11/32 Bush	ısh. 3.90	K403C	Refacer H.P., 115V,	415.00 Single	M5A	Arbor	36
462T Adapte 463 Arbor	er 1.30	C101R Positione	r _ 1.20	H310B7/16 Bush	h 3.90	Phas	se, 60 Cycle	with-	M5A M5B	C Center Mandrel	93
463B Adapt	er 1.80		144.00	H310D1/4 Ada H310E9/32 Ad	pter 3.60 apt. 3.60		Butt Grinde		M5C	Mandrel	96
463S Arbor 463T Adapt	er 1.8	C165 Gauge	31.50	H310F21/64 Ac	lap. 3.60	K403D	Refacer H.P., 230V,	415.00 Single		Sleeve	
464S Arbor 464T Adapt	er 2.6			H310G Rd. Driv H310S Swivel H		Phas	se, 60 Cycle	with-		Mandrel	
465S Arbor	3.3	C165C Arms (2)	_ 5.00	H310SB Swiv. H310T T-Wrence		out !	Butt Grinde	r.	M6B	Arbor Mandrel	181
467B Adapt	er 1.8		eel 3.90	H310TB Body .	2.10	K403C	M Refacer H.P., 115V,	454.00 Single	M6S	Sleeve C Clamp	6
468D Arbor	4.0	E1 Dresser	2.45	H310TH Handle	50	Phas	se. 60 Cycle	, with	M6C	Mandrel	214
470 Chuck	21.0	Lock Nut (E1)	15	SOLID REAL		Butt	Grinder.		M7	Mandrel	364
480 Chuck 481 Arbor	4.0	Handle		H1236 Reamer . H1250 Reamer .			M Refacer			Mandrel A Arbor	
482 Arbor -	4.0		1.25	H1255 Reamer . H1275 Reamer .	4.00	Phas	H.P., 230V, se, 60 Cycle	, with	M25.	AC Center	3
482B Adapt	er 3.3	E1H Hub	.50	H1281 Reamer	3.75	Butt	Grinder.				
482S Arbor 482T Adapt			ea15 ew .30	H1295 Reamer . H1312 Reamer .			Refacer			Mandrel A Arbor	
483 Arbor _	4.0	E1W Copper		H1315 Reamer .	4.00	Phas	H.P., 115-2 se, 60 Cycle,	with-	M26.	AC Center	3
483B Adapt 483S Arbor		E2 Dresser	5.10	H1334 Reamer . H1343 Reamer .		out	Butt Grinde	r.	M35	S Sleeve Mandrel	31
483T Adapt 484 Arbor	er 2.0		15	H1353 Reamer H1354 Reamer		Please	Specify Vo	itage	M35.	A ArborAC Center	12
484S Arbor	3.3	Handle		H1363 Reamer			M Refacer H.P., 115-2		M35	S Sleeve	14
484T Adapt	er 2.0	E2F Wick		H1373 Reamer	3.75	Phas	se, 60 Cycle	, with	M36	Mandrel	36
485B Adapt	er 2.4 3.7		1.20	H1374 Reamer . H1375 Reamer .	4.20		Grinder. Specify Vo	ltage	M36.	A Arbor AC Center	17
485S Arbor 485T Adapt	er 2.0	E2N Hub Nut	ea45	H1393 Reamer	4.20				M36	S Sleeve	14
486B Adapt 486S Arbor	er 2.4	E2S Center Scr E3 Dresser	7.15	H1397 Reamer . H1406 Reamer .			Motors are above Ref		M45.	Mandrel A Arbor	23
486T Adapt	er 2.0	Lock Nut (E3)	15	H1437 Reamer	4.10				M45	AC Center -	8
487B Adapt 487S Arbor	3.7	Handle		H1472 Reamer . H1500 Reamer .	4.45		Pump Dia. Dresse			S Sleeve	
488D Arbor 488F Arbor	5.4	ESF WICK	2.25	H1625 Reamer	5.75	K434C	Holder Butt Grinde	3.40	M46 M46	Mandrel A Arbor	60 24
488G Arbor	9.4	E3H Hub	2.00	H2000 Reamer	Set 16.00	K436D	Holder	.90	M46	AC Center	8
488 <b>H</b> Arbor 490 Drill	Chuck 29.0	E3S Center Scr	ew .55	For Ford, Mercand Chevrolet.		K436V K443H	Rest L Head	3.70 190.00	M55	S Sleeve Mandrel	231
492 Arbor -	5.4	Dresser	12.40	H2002 Reamer For Chrysler,	DeSoto.	K450 A	ttachment	13.00	M90	Mandrel Set	_ 53
493 Arbor		E5C Casting		Dodge and Pl	ymouth.	K500H	Refacer	520.00	M10	0 Mandrel S	et 83
493B Adapt 493T Adapt	er 2.6	E5F Wick	10	SOLID		1/2	H.P., 115-2 se, 60 Cycle	30V, 1	M10 M10	0W Mand. So 0X Mand. So	et 73 et 71
494 Arbor 494B Adapt	5.4	E5G Wheel	5.50	PILOTED RE Special length for		out	Butt Grinde	r.	M10	1 Mand. Set	_132
494T Adapt	er 2.6	E5N Hub Nut	ea55	Lee Valve Guide	Reaming	Please	Specify Vo	ltage	M10 M10	1B Mand. Bo 1W Mand. Set	119
495 Arbor 495B Adapt	er 2.6	0		Sets.	Party In	K500H	M Refacer	560-00			
495S Arbor 495T Adapt	5.4	CAST IRO	N	H2315 Reamer . H2317 Reamer	4.60	1/2	H.P., 115-2	30V. 1		0 Mandrel So 0W Mand. So	
496S Arbor	5.4			H2328 Reamer	4.60	Butt	se, 60 Cycle Grinder.	, with	M20	0X Mand. Set 1 Mandrel S	t 108
497S Arbor 498F Arbor	8.0	All Sizes		H2342 Reamer H2347 Reamer	4.60	Please	Specify Vo	ltage	M20	1B Box	6
498G Arbor	9.4	WALNE CIT	DES	H2342 Reamer H2347 Reamer H2349 11/32 + H2354 11/32 +	.005 4.60 S	Special	Motors are	Avail-		1W Mand. Se 2 Mandrel Se	
	13.0			H2359 Reamer	4 60 2	able for	above Ref	acers.		2W Mand. Set	
1 Rod Align	ner118.0	: Items are obsolet			4.00 Ta		New Item				

Part List No. Description Price	Part List No. Description Price	Part List No. Description Price	Part No. Description List Price	Part List No. Description Price
OV5GH60W Wheel 5.25 OV5GH80W Wheel 5.25	P190B Bushing NC P190W Washer15	P277F Washer55 P277H Holder 1.35	R34 Spac. Collar20 R38 Two Washers .20	R212M1 (9½MM) R213M12 (10MM)
OV5GH80S Wheel 5.50 For Stelite Face Valves.	P191 Holder 7.80 Exchange with	P278 Holder 3.15 P280 Attachment _ 29.46 P286B Blade Set50	R40 Washer	R214M5 (11MM) R215P3 (12MM)
FOR K103A, K303, K403, K403C, K500 & K500C Series	Used Holder 6.60 P191W Washer15	P287 Cleaner 1.90 P287B Blade Set65	R42 Extension50	NOTE: Special pilots that can be made from stand- ard size are 1-1/2 times
OV5GH60 Wheel 5.25 OV5GH80 Wheel FOR A1, A2, K3, K3A,	P196X Wh. Holder 15.30 Exchange with Used Holder 10.60	P288 Cleaner 2.60 P289B Blade Set75 P290 Cleaner 2.60	R44 Extension       .56         R45 Extension       .56         R46 Extension       .56	price of the pilot used. Pilots up to 2" longer than standard size are
K103 5.25 OV6FH60 Wheel 5.10	P197X Wh. Holder 15.30	P290B Blade Set85 P291 Cleaner 2.60	R47 Pilot Wrench .45 R55B Pwr. Drive 95.00	two times standard price. Over two inches
FOR K. O. Lee A4, A5, Van Norman "Z" Series P61 Pilot Wrench 4.90	Exchange with Used Holder 10.60	P300 Grinder Set 149.50 P300BB Grd. Set _157.00 P301 Grinder Set 189.50	R56 Wrench 3.15	longer three times stand- ard price.
SELF EXPANDING PILOTS	P198X Wh. Holder 15.30 Exchange with	P301BB Grd. Set _197.00 P302 Grinder Set 239.50	R62 Drive Pin       .35         R63 Socket       3.60         R63L Socket       3.60	RESEATER SETS R500 Reseater Set 103.00
P83 Pilot 6.00 P83L Pilot 6.50	Used Holder 10.60 P199X Wh. Holder 15.30	P302BB Grd. Set _246.00 P350 Indicator 31.50 P360 Angle Drive 20.00	R65 Sc. Fd. At 12.00 R67 Feed Screw 3.80	R501 Set with R55 198.00 R502 Reseater Set 147.00 R503 Set with R55 242.00
P83R Pilot 6.50 P83RL Pilot 6.50 P83S Pilot 6.00	Exchange with Used Holder 10.60	P361 Wrench 6.30 P372 Wh. Dresser 48.00 P378 Pilot Assem. 4.40	R67S         Feed         Screw         3.80           R68         Stop         Collar         1.80           R69         Stop         Collar         2.10	R504 Reseater Set 202.00 R504B Box 23.00
P84 Pilot       6.00         P84L Pilot       6.50         P84M Pilot       6.00	P200B Box & Dr. 24.00 P200BB Box 16.00 P202 Grinder Set _165.00	P390 Wh. Holder 7.80	R70 Coupling       1.30         R70B Drive Bar       .55         R87 Clincher       2.80	R505 Set with R55 297.00 R510 Univ. Guide 28.00 Used to service
P84R Pilot 6.50 P84RL Pilot 6.50	P214 Switch replaced by 26591N Switch 2.40	Exchange with Used Holder 6.60	R88 Clincher 2.80 R95 Ring Extrac. 2.80	V-8 Heads. R700 Reseater Set 93.00 R710 Univ. Guide 28.00
P84S Pilot       6.00         P85 Pilot       6.00         P85F Pilot       6.00         P85L Pilot       6.50	P215A Shaft 2.00 P215B Shaft 2.00 P217 Chuck 2.90	P391 Wh. Holder 7.80 Exchange with Used Holder 6.60	R96 Clamp Rod65 RESEATER CUTTERS	R712 Re. Shank 12.60 R730 15/16 Cutter 4.10
P85L Pilot	P220 Terminal 4.20 P223 Terminal 4.20	P398 Wh. Holder _ 6.50	R98 3.50 R110 3.50 R99 3.50 R111 3.50	R731 31/32 Cutter 4.10 R732 1" Cutter 4.10 R734 1-1/16 Cut. 4.10
P85S Pilot 6.00 P86 Pilot 6.00	VALVE SEAT GRINDING WHEELS	P399 Wh. Holder _ 6.50 P400 Grd. Set126.00 P422 Util. Driver 72.00	R100 3.50 R112 3.50 R101 3.50 R113 4.10 R102 3.50 R114 4.10	R736 1-1/8 Cutter 4.10 R738 1-3/16 Cut. 4.10
P86L Pilot       9.50         P86M Pilot       8.50         P86RM Pilot       6.50	Gen. Finish- Rough- Pur. ing ing Each	26593C Swith 2.40 For P322, P422, P522 P460 Angle Drive 30.00	R103 3.50 R115 4.10 R104 3.50 R116 4.10	R740 1-1/4 Cutter 4.10 R742 1-5/16 Cut. 4.10 R743 1-23/64" VW 4.10
P86S Pilot       8.50         P87 Pilot       6.00         P87L Pilot       9.50	*P224 *P224F *P224R 2.60 *P225 *P225F *P225R 2.60 *P226 *P226F *P226R 2.60	P461 Angle Drive 30.00 P462 Angle Drive 30.00	R105 3.50 R117 4.10 R106 3.50 R118 4.10 R107 3.50 R119 4.10	R744 1-3/8 Cutter 4.10 R746 1-7/16 Cut. 4.10
P87M Pilot 8.50 P87S Pilot 8.50	*P227 *P227F *P227R 2.40 *P228 *P228F *P228R 2.40	P463 Angle Drive 30.00 P500B Seat Gr. Box 23.00	R108 3.50 R120 4.10 R109 3.50	RV4GQMB46 Whl. 8.90 All Refacers except
P88 Pilot       6.50         P88L Pilot       9.50         P88M Pilot       8.50	*P229 *P229F *P229R 2.40   P231   P231F   P231R 2.40   P232   P232F   P232R 2.40	P522 Util. Driver 72.00 PD716 Abr. Disc60	Special Carbide Tipped Cutters, each 10.00	K403, K403C, K500 and K500C Series.
P89 Pilot 6.50 P90 Pilot 6.00 P91 Pilot 6.50	P233 P233F P233R 2.40 P234 P234F P234R 2.40 P235 P235F P235R 2.40	(Box of 25) 14.85 PD724 Abr. Disc45	RESEATER PILOTS R208 Pilot 3.50	RV4KH46 Wheel _ 3.50
P91L Pilot 7.00 P92 Pilot 6.50	P236 P236F P236R 2.40 P237 P237F P237R 2.40	(Box of 25) 10.75 PD736 Abr. Disc45 (Box of 25) 10.75	R209 Pilot       3.50         R210 Pilot       3.50         R210M1 Pilot       3.50	RV4KH60 Wheel 3.50 For K403, K403C, K500, and K500C Series Models
P93 Pilot 6.50 P94M Pilot 8.50 P95 Pilot 6.50	P238     P238F     P238R     2.40       P239     P239F     P239R     2.40       P240     P240F     P240R     2.40	PD760 Abr. Disc40 (Box of 25) 9.35 PD780 Abr. Disc40	R210M2 Pilot 3.50 R210P1 Pilot 3.50	RV4KH60W Wheel 3.95
P95L Pilot       6.50         P95S Pilot       6.00         P96 Pilot       6.50	P241 P241F P241R 2.40 P242 P242F P242R 2.40 P243 P243F P243R 2.40	(Box of 25) 9.35 PD7100 Abr. Disc .40 (Box of 25) 9.35	R210P2 Pilot 3.50 R210P15 Pilot 3.50 R210P30 Pilot 3.50	RV4KH80W Wheel 3.95 STUD WRENCHES
P96L Pilot 6.50 P96S Pilot 6.00	P245 P245F P245R 2.95 P247 P247F P247R 2.95	PR3BH60 Wheel 1.80	R211 Pilot 3.50 R211M1 Pilot 3.50 R211M2 Pilot 3.50	S1 Wrench 4.50 S1W Wedge 1.45
P97 Pilot 6.50 P97L Pilot 7.00 P97R Pilot 6.50	P251 P251F P251R 2.95 P255 P255F P255R 3.50 P259 P259F P259R 3.50	PR3DH60 Wheel 1.80 PR3FH60 Wheel 2.25 PR3GH60 Wheel 2.60	R211M3 Pilot 3.50 R211P1 Pilot 3.50	S2S Screw
P98 Pilot       9.50         P98L Pilot       12.00         P99 Pilot       12.00	P261 P261F P261R 3.80 P263 P263F P263R 4.05	PS190 Wh. Holder 7.80 PS390 Wh. Holder 7.80 PS4BH60 Wheel 1.95	R211P2 Pilot 3.50 R211P5 Pilot 3.50 R211P15 Pilot 3.50	TX58 Ben. Gr. Wh. 4.25 6x1/2x1/2 For Sioux 2070, B & D
PILOTS MM SIZES P8236 6MM Pilot 6.50	*P224, P225, P226, P227, P228 and P229 Wheels have 9/16"—16 thd. All	PS4DH60 Wheel 3.30 PS4FH60 Wheel 3.80 PS4GH60 Wheel 4.15	R211P30 Pilot 3.50 R212 Pilot 3.50	6" Special and K. O. Lee T1000, T1250.
P8236S 6MM Pilot 6.50 P8255 61/2MM Pilot 6.50	other K. O. Lee Wheels have 11/16"—16 thd.	PV2FF60 Wheel .90 PV4BH220 Wheel 3.80	R212M2 Pilot 3.50 R212M4 Pilot 3.50	TX59 Ben. Gr. Wh. 4.75 6x5/8x1/2 For Sioux 2065, B & D
P8275 7MM Pilot 6.50 P8295 7½MM Pilot 6.50 P8315 8MM Pilot 6.50	P190B Adapter Bushing (11/16"—16 to 9/16"— 16) furnished no charge.	R0 Reseat. Shank 12.60	R212P1 Pilot 3.50 R212P2 Pilot 3.50	6" Standard (A) TX60 Ben. Gr. Wh. 5.25
P8334 8½MM Pilot 6.50 P8354 9MM Pilot 6.50 P8374 9½MM Pilot 6.50	SEAT GRINDING WHEELS FOR	R1 Reseat. Shank 12.60 R2 Reseat. Shank 12.60 R3 Reseat. Shank 15.00	R212P5 Pilot 3.50 R212P15 Pilot 3.50 R212P30 Pilot 3.50	6x3/4x1/2 For Sioux 2005, 2010, B & D Heavy Duty
P8393 10MM Pilot 6.50 P8472 12MM Pilot 6.50	KWIK-WAY Wheels have 13/16"-13 thd.	R4 Reseat. Shank 13.20	R213 Pilot       3.50         R213M2 Pilot       3.50         R213M9 Pilot       3.50	(H, K & L), K. O. Lee T1333.
P8820 Pilot (Ford Prefect) 7.00 NOTE: Special pilots that	P236K Wheel 2.80 P237K Wheel 2.80	R4B Drive Bar50 R0, R1, R2 and R3 Reseater Shanks avail-	R214 Pilot 3.50 R214M1 Pilot 3.50	W160 Wheel
can be made from standard size are 1-1/2 times price of the pilot used.	P239K Wheel 2.80 P241K Wheel 2.80 P243K Wheel 2.80	able for cutting .005, .010, .015, .020, .030, and .045 oversize re-	R214M2 Pilot 3.50 R214P1 Pilot 3.50 R214P2 Pilot 3.50	W175 Wheel
Pilots up to 2" longer than standard size are	P245K Wheel 3.50 P247K Wheel 3.50 P251K Wheel 3.50	cess at same prices as listed above.	R215 Pilot 3.50 R216 Pilot 4.10	WB210F Brush 1.75
two times standard price. Over two inches longer three times stand-	P255K Wheel 4.10 P259K Wheel 4.10	R10 Un. Guide 15.00 R10B Ball 4.40	R216M1 Pilot 4.10 R216M2 Pilot 4.10 R216P1 Pilot 4.10	WB210S Brush 1.50 WB220S Brush 1.75 VALVE SEAT INSERT
ard price. P135L Wheel 1.10	P261K Wheel 4.40 P263K Wheel 4.70	R10C Guide	R216P2 Pilot 4.10 R217 Pilot 4.10	RINGS See Cast Iron and
P136L Wheel 1.30 P137D Wheel 1.10 P137G Wheel 1.10	GRINDING WHEELS FOR STELLITE P235S Wheel 2.40	R12 Rais. Block 4.40 R12M Rais. Block 4.40 R15H Driv. Head 1.50	R217M1 Pilot 4.10 R217P1 Pilot 4.10 R218 Pilot 4.10	Lee-Alloy Ring Table Sheets for Prices.
P137L Wheel 1.30 P138L Wheel 1.70	P237S Wheel 2.80 P239S Wheel 2.80	R16H Driv. Head 1.70 R17H Driv. Head 1.70	R219 Pilot	ABRASIVE DISCS Listed below, each40
P176C Dia. Screw 8.00 5/16-24 Thread for Waterbury-Hall	P241S Wheel       2.80         P243S Wheel       2.80         P245S Wheel       3.60	R18H Driv. Head 1.70 R19 Driv. Handle 2.35 R19H Driv. Head 1.70	R222 Pilot 4.65 R222P1 Pilot 4.65	416 480 560 424 516 580 436 524 4100
Dressers P176D Dia. Screw 6.00	P247S       Wheel       3.60         P251S       Wheel       3.60         P255S       Wheel       4.80	R20H Driv. Head 1.70 R21H Driv. Head 1.70	R222P2 Pilot 4.65 R224 Pilot 4.65 R226 Pilot 4.65	450 536 5100 460 550
5/16-18 Thread for K. O. Lee Dressers.	P259S Wheel 4.80 P270 Holder 5.10	R22H Driv. Head 1.70 R23H Driv. Head 1.70 R24H Driv. Head 1.70	R227P6 Pilot 4.65 R233 Pilot 4.65	1030 "V" Belt 1.90 1032 "V" Belt 2.40 1320 "V" Belt 2.40
P176E Dia. Screw 6.00 3/8-24 Thread fits Many Popular Type	P273 Holder 5.10 P274 Holder 5.10	R25H Drv. Heiad 1.80 R26H Driv. Head 1.90	Reseater Millimeter Pilots, below, ea. 4.65	LEE CONCENTRATE
Dressers. P178 Pilot 2.75	P274R Hold Down NC P275B Band 3.15 P275C Guard 2.40	R27H Driv. Head 2.10 R28H Driv. Head 2.60 R29H Driv. Head 2.60	R208M14 (6MM) R208P6 (6½MM) R209M5 (7MM)	2679 1 Pt. Can90 2659 1 Qt. Can 1.50 HONING AND
P189 Brush .20 P190 Holder 7.80 Exchange with	P275E Guard 2.40 P277 Attachment 7.60 P277C Backing 25	R30H Driv. Head 2.70 R31H Driv. Head 2.90 R32H Driv. Head 3.10	R209P15 (7½MM) R210P3 (8MM) R211M9 8½MM)	GRINDING OIL For Valve Refacers
Used Holder 6.60		R33 Spac. Collar20	R211P10 (9MM)  ▲ New Item	2699 Gallon Can 2.40

